Montana Department of Transportation

Environmental Scan

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Table of Contents

List of Tables

List of Figures (located in Appendix A)

List of Appendices

List of Acronyms

AST	Aboveground Storage Tank
BLM	Bureau of Land Management
BMA	Block Management Area
BNSF	Burlington Northern Santa Fe (Railroad)
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Index System
CESQG	Conditionally Exempt Small Quantity Generator
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
GIS	Geographic Information System
LUST	Leaking Underground Storage Tank
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
MFWP	Montana Department of Fish, Wildlife, and Parks
MP	milepost
NFIP	National Flood Insurance Program
NPL	National Priority List
NPS	National Park Service
NRC	National Response System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
ROW	right-of-way
TMDL	total maximum daily load
TRE	Theodore Roosevelt Expressway
TRED	Transportation Regional Economic Development
TRI	Toxics Release Inventory
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

1 Introduction

The Montana Department of Transportation (MDT) launched the US 2/MT 16 Transportation Regional Economic Development (TRED) Study to examine whether four-lane highway improvements can be justified by economic and safety considerations. The Study's focus is on the federally-named Theodore Roosevelt Expressway (TRE). The Montana segment of the TRE includes US 2 from the North Dakota state line to Culbertson, Montana, then north on MT 16 to the Port of Raymond (Figure 1).

The TRED Study will assess future opportunities that might indicate the need for highway expansion in the area. Trade areas are being assessed at the corridor level, as well as regionally and internationally. The Study includes an environmental scan process that is reported in this document.

1.1 Scope and Purpose

The purpose of an environmental scan during a corridor study is to provide an initial understanding of potential environmental issues that could influence the development of improvement alternatives along the corridor as a project moves forward. Environmental resources are protected by Federal, state, and local laws. The objective of the environmental scan is to review existing environmental conditions in the project area and identify constraints that may influence project development.

The environmental scan process consisted of support meetings and/or comment opportunities with agency representatives, compilation and review of environmental databases, and a field reconnaissance of the US 2/MT 16 TRED corridor. The reconnaissance of the corridor was conducted on August 1 and 2, 2006.

Agencies consulted during the environmental scan process include:

- Montana Department of Transportation
- United States Environmental Protection Agency
- United States Army Corps of Engineers
- United States Fish and Wildlife Service (including Medicine Lake National Wildlife Refuge)
- Montana Department of Fish, Wildlife, and Parks

1.2 Background

The TRE in Montana is a major thoroughfare not only for eastern Montana, but for the region surrounding it. This corridor serves international and interstate commerce and travel. MT 16 is the primary north/south corridor in eastern Montana, connecting Interstate 90 with Canada. US 2 is a major east/west corridor across northern Montana.

The primary objective of the TRED Study is to identify what economic, regulatory, or operational changes would result in traffic and safety conditions that would warrant building a 4-lane road on the TRE in Montana.

Secondary objectives of the TRED Study include the following:

- Assess existing regional economic conditions and development opportunities
- Develop traffic growth forecast and freight volume projections under existing development plans and economic opportunities
- Develop traffic growth forecast and freight volume projections with induced economic development and travel demand
- Conduct sensitivity analysis and risk analysis to facilitate consensus building
- Engage local stakeholders and the general public

The TRED Study will include the documentation of existing conditions, including this environmental scan, as well as an assessment of alternatives, forecasts of population and traffic, econometric analysis of roadway improvements, development of alternatives and recommendations, and a comprehensive public involvement process.

1.3 Organization of Report

This report goes on to describe the geographic setting of the existing US 2 and MT 16 corridors in the study area (Section 2). The document continues with descriptions of environmental scan methodologies and results for each geographic area for physical resources (Section 3), biological resources (Section 4), cultural resources (Section 5), and utilities (Section 6). Figures for the report may be found in Appendix A. Photos of the study corridor are included in Appendix B. A list of acronyms is defined on page v.

2 Geographic Setting

For the purpose of this environmental scan, the project has been divided into four segments (Figure 1):

- US 2 – North Dakota State Line to Culbertson (MP 669.5 – 644.5)
- MT 16 – Culbertson to Medicine Lake (MP 86.25 – 64)
- MT 16 – Medicine Lake to Plentywood (MP 64 – 41.25)
- MT 16 – Plentywood to the Canadian Border (MP 0 – 15.5)

The following sections will describe these segments.

2.1 US 2 – North Dakota State Line to Culbertson

The US 2 corridor from the North Dakota state line to Culbertson extends from approximately milepost (MP) 669.5 at the North Dakota state line west to approximately MP 644.5 at the intersection with MT 16 in Culbertson. The corridor passes rolling and grassy terrain, most of which is agricultural, with some wetland areas. There are a few oil drilling and storage operations, particular near MP 658. Railroad tracks approach the corridor from the south near MP 659 and follow the corridor closely west into Culbertson. Culbertson is the largest community along this corridor, and Bainville is a smaller community located near MP 659.

2.2 MT 16 – Culbertson to Medicine Lake

The MT 16 corridor from Culbertson to Medicine Lake extends from the intersection with US 2 in Culbertson at approximately MP 86.25 through the town of Medicine Lake, at approximately MP 64. The corridor passes through flat to rolling grassy terrain, most of which is agricultural including some potentially historic farms. There are several wetland areas located within the corridor. The Medicine Lake National Wildlife Refuge (NWR) is located at approximately MP 66. The communities located in this corridor include Culbertson (MP 86), Froid (MP 75.5), and Medicine Lake (MP 64).

There are many Block Management Areas (BMA) located throughout the corridor, managed by the Montana Department of Fish, Wildlife, and Parks (MFWP). The Block Management program is a cooperative effort among private and some public landowners, MFWP, and hunters. The program seeks to: 1) maintain public hunting access to private and isolated public lands; 2) help landowners manage public hunting and provide benefits to offset impacts like increased road maintenance and weed control; and 3) help MFWP manage wildlife.

2.3 MT 16 – Medicine Lake to Plentywood

The MT 16 corridor from Medicine Lake to Plentywood extends from approximately MP 64 on the north side of Medicine Lake through the town of Plentywood to the intersection with MT 5 at approximately MP 41.25. The corridor passes through flat to rolling grassy terrain, most of which is agricultural including some potentially historic farms. There are some bluffs located on the east side of the highway near MP 53. There are several wetland areas and BMAs located within the corridor. Oil production and storage is

present throughout the segment; of particular note is a location with several oil tanks and a sludgy pond on the west side of the highway near MP 62.

The communities located in this corridor include Reserve (approximately 0.75 miles west of MP 56 near the railroad), Antelope (MP 50), and Plentywood (MP 42). Plentywood is a relatively large community, and includes residential, commercial, and some industrial areas.

2.4 MT 16 – Plentywood to the Canadian Border

Milepost markers on MT 16 are reset to zero at the intersection with MT 5 on the north side of Plentywood. The MT 16 corridor from Plentywood to the Canadian border extends from that intersection at MP 0, to the Canadian border at approximately MP 15.5. The corridor passes through rolling grassy terrain, most of which is agricultural including some potentially historic farms. There are several wetland areas associated with glacial potholes located within this segment.

There is some commercial and industrial land use for the first quarter-mile north of Plentywood. There is a golf course located at MP 0.5. The communities located in this corridor include Plentywood (MP 0) and Raymond (MP 7).

3 Physical Resources

3.1 Land Ownership

The TRED project display of public ownership in the Study Area (Appendix F) was reviewed for land ownership by private, Federal, and state entities along the study corridor. Refer to Figure 2 for an overview of land ownership in the study corridor.

MDT compiled aerial photographs of six communities in the corridor with overlays of a 4-lane right-of-way (ROW), so that preliminary impacts to these communities could be assessed from expanding the roads to 4-lanes. An urban section with a 58-foot ROW was assumed for Culbertson, Medicine Lake, and Plentywood. A rural section with a 110-foot ROW was assumed for Bainville, Froid, and Antelope. These aerials were reviewed and discussions of preliminary community impacts are included in the following sections. These discussions are preliminary in nature, and are not intended to substitute for full socioeconomic impact analyses.

Reviews were also conducted to determine the presence of Section 4(f) and Section 6(f) properties along the corridor. Section 4(f) refers to the original section within the Department of Transportation Act of 1966, which set the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. Prior to approving a project that "uses" a Section 4(f) resource, the Federal Highway Administration (FHWA) must find that there is no prudent or feasible alternative that completely avoids 4(f) resources. "Use" can occur when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of the land that is adverse to a 4(f) resource. Constructive "use" can also occur when a project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under 4(f) are "substantially impacted". (HDR, 2006) Section 4(f) resource information was gathered by field observation and review of the National Register of Historic Places (NRHP) list for Roosevelt and Sheridan counties. It can also be assumed that each of the small communities in the study corridor likely has its own park or recreation facility, in addition to historic sites that may not be listed on the NRHP. It should be noted that potential 4(f) sites that were identified using the NRHP and windshield observations of recreational areas are not intended to substitute for an extensive 4(f) evaluation. Formal 4(f) evaluations will have to be conducted prior to any land acquisition or construction along the highway corridor.

Section 6(f) of the Land and Water Conservation Funds Act applies to all projects that impact recreational lands purchased or improved with land and water conservation funds. The Secretary of the Interior must approve any conversion of property acquired or developed with assistance under this act to other than

public, outdoor recreation use (ITD, 2006). 6(f) resource information for Roosevelt and Sheridan counties was collected from MFWP.

3.1.1 US 2 – North Dakota State Line to Culbertson

According to the Public Ownership map created for the TRED Study Area in July 2006 (Appendix F), the US 2 – North Dakota State Line to Culbertson segment is predominantly privately owned. There are scattered tracts of Montana State Trust Lands and Turtle Mountain Allotted Lands, which is tribal land for the Turtle Mountain Chippewa Indians. There are only a few tracts of Bureau of Land Management (BLM) land, mainly to the south.

The 110-foot ROW overlay in Bainville shows very little impacts to residences. Most of the ROW to be acquired is agricultural land. The frontage of two residences and the driveway for another will be slightly impacted.

The 58-foot ROW overlay in Culbertson shows slightly more impact to residential areas. To avoid parks (4(f) resources) along the MT 16 corridor in Culbertson, there may be more residential frontage converted to ROW. It is difficult to assess at this stage whether any structures would be affected, but it is possible.

4(f) resources in this corridor segment are summarized in Table 1.

Table 1. 4(f) Resources within the US 2 - North Dakota State Line to Culbertson Segment

Name	Type of 4(f) Resource	Town (Specific Location Relative to Corridor)	Additional Information (Photo Reference)
Hale's Filling Station and Grocery (Lanark town site)	Historic Site – listed on NRHP	Bainville (Approx. MP 653.5 - ¼ - ½ mile north of US 2)	Listed 8/16/1994, NRHP Reference No. 94000864 (no photo available)

According to MFWP data, no 6(f) resources are located in this corridor segment.

3.1.2 MT 16 – Culbertson to Medicine Lake

According to the Public Ownership map for the TRED Study Area (Appendix F), the MT 16 – Culbertson to Medicine Lake segment is predominantly privately owned. The Fork Peck Indian Reservation is generally located 1-5 miles west of the highway. There are a few scattered tracts of Montana State Trust Lands and two tracts of BLM land. U.S. Fish and Wildlife Service (USFWS) land associated with the Medicine Lake NWR is noticeable at Medicine Lake, Homestead Lake, and Johnson Lake.

As discussed for the US 2 portion of Culbertson, the 58-foot ROW overlay in Culbertson shows some impact to residential areas. To avoid parks (4(f) resources) along the MT 16 corridor in Culbertson, there may be more residential frontage converted to ROW. It is difficult to assess at this stage whether any structures would be affected, but it is possible.

The 110-foot ROW in Froid does not impact as much residential land, as neighborhoods are generally located away from the highway. Mainly agricultural frontage is impacted, with some minor impacts to a few residences.

The 58-foot ROW overlay in Medicine Lake shows some impact to residential areas. Much of the residential neighborhoods are located off of the highway, but there are several residences that would be affected by roadway widening. It is difficult to assess at this stage whether any structures would be affected, but it is possible.

4(f) resources in this corridor segment are summarized in Table 2.

Table 2. 4(f) Resources within the MT 16 – Culbertson to Medicine Lake Segment

Name	Type of 4(f) Resource	Town (Specific Location Relative to Corridor)	Additional Information (Photo Reference)
Culbertson school area	Park	Culbertson (Northwest corner of MT 16 and US 2 junction)	Observed playground and ball fields on northeast corner of MT 16 and US 2 (see Appendix A, photo 74)
Fjeseth Field	Park	Froid (Main and MT 16)	Observed baseball field in Froid (see Appendix A, photo 19)
Medicine Lake NWR	Wildlife Refuge	Medicine Lake (MT 16 crosses refuge at MP 65.5)	Encompasses Medicine Lake, Homestead Lake, and Johnson Lake (see Appendix A, photos 22-26)
Tipi Hills	Historic Site – listed on NRHP	Medicine Lake (address restricted)	Listed 8/1/1975, NRHP Reference No. 75001085 (no photo available)

6(f) resources located in this corridor segment are summarized in Table 3.

Table 3. 6(f) Resources within the MT 16 – Culbertson to Medicine Lake Segment

Name	Town
Culbertson Schools Recreation Complex	Culbertson
Culbertson Swimming Pool (3 listings)	Culbertson
Culbertson Bicentennial Park	Culbertson
Froid City Park	Froid
Medicine Lake Town Park	Medicine Lake
Medicine Lake Pool and Park	Medicine Lake

3.1.3 MT 16 – Medicine Lake to Plentywood

According to the Public Ownership map for the TRED Study Area (Appendix F), the MT 16 – Medicine Lake to Plentywood segment is predominantly privately owned. The Fork Peck Indian Reservation is generally located 1-3 miles west of the highway. There are a few scattered tracts of Montana State Trust Lands. There are a few tracts of Turtle Mountain Allotted Lands, which are tribal lands.

The 110-foot ROW overlay in Antelope shows some impact to residential areas. The residential neighborhoods of this community are located adjacent to the highway, and several residences would be impacted by roadway widening. Most of the structures appear to be set back far enough from the existing roadway that impacts to structures is not anticipated at this stage.

The 58-foot ROW overlay in Plentywood shows the most impact to residential and commercial areas. Several residential neighborhoods and commercial areas are located adjacent to the existing highway. It is difficult to assess at this stage whether any structures would be affected, but it is possible.

4(f) resources in this corridor segment are summarized in Table 4.

Table 4. 4(f) Resources within the MT 16 – Medicine Lake to Plentywood Segment

Name	Type of 4(f) Resource	Town (Specific Location Relative to Corridor)	Additional Information (Photo Reference)
Unnamed Playground at Mill Street	Park	Plentywood (Northeast corner of MT 16 and Mill Rd)	Observed in field - private or public status unclear (see Appendix A, photo 49)
Ball field complex	Park	Plentywood (Between Robert and Maple Streets, ¼ mile south of MT 16 at MP 42.25)	Observed in field (no photo available)

6(f) resources located in this corridor segment are summarized in Table 5.

Table 5. 6(f) Resources within the MT 16 – Medicine Lake to Plentywood Segment

Name	Town
Plentywood City Park (2 listings)	Plentywood

3.1.4 MT 16 – Plentywood to the Canadian Border

According to the Public Ownership map for the TRED Study Area (Appendix F), the MT 16 – Plentywood to the Canadian Border segment is predominantly privately owned. There are a few scattered tracts of Montana State Trust Lands.

The 58-foot ROW overlay in Plentywood shows the most impact to residential and commercial areas. The portion of this segment that travels north from the intersection with MT 5 mainly impacts commercial areas. Residential neighborhoods in this area are located off of the highway. It does not appear likely at this stage that any structures would be affected.

4(f) resources in this corridor segment are summarized in Table 6.

Table 6. 4(f) Resources within the MT 16 – Plentywood to the Canadian Border Segment

Name	Type of 4(f) Resource	Town (Specific Location Relative to Corridor)	Additional Information (Photo Reference)
Plentywood Golf Course	Park	Plentywood (East side of MT 16, approx. MP 0.5)	Observed in field (no photo available)
Raymond Grain Elevators Historic District	Historic Site – listed on NRHP	Raymond (Syme Ln, approx ¼ mile west of MT 16 at MP 7)	Listed 10/27/1993, NRHP Reference No. 93001148 (no photo available)

6(f) resources located in this corridor segment are summarized in Table 7.

Table 7. 6(f) Resources within the MT 16 – Plentywood to the Canadian Border Segment

Name	Town
Plentywood Golf Course	Plentywood

3.2 Geology and Soils

Information was obtained on geology and soils to determine the presence of prime farmland, geologic faults, and potential geologic hazard areas with regard to road-building in the corridor study areas.

Prime farmland soils are those that have the best combination of physical and chemical characteristics for producing food, feed, and forage; the area must also be available for these uses. Prime farmland can be either non-irrigated or lands that would be considered prime if irrigated. Federal programs are required to minimize the unnecessary and irreversible conversion of farmland to nonagricultural uses and should be compatible with policies to protect farmland.

Information regarding areas of prime farmland in the corridor area was compiled from the US Department of Agriculture, Natural Resource Conservation Service. Figures 3 through 6 depict prime farmland and general geologic features in the study corridor.

Available Geographic Information System (GIS) information was reviewed for fault lines and seismic hazard areas. This geologic information can help determine any potential design and construction issues related to embankments and bridge design. The following paragraphs describe the geologic and prime farmland soils findings for each segment of the corridor.

3.2.1 US 2 – North Dakota State Line to Culbertson

Geologic and prime farmland features for this segment are presented in Figure 3. Approximately half of the corridor in this segment passes through land designated as either Prime Farmland If Irrigated or Farmland of Statewide Importance. No fault lines are visible in this segment. It appears as though this segment passes through an area of low seismic hazard.

3.2.2 MT 16 – Culbertson to Medicine Lake

Geologic and prime farmland features for this segment are presented in Figures 4 and 5. There is virtually no land designated as either Prime Farmland If Irrigated or Farmland of Statewide Importance within a mile of MT 16 from Culbertson (approximate MP 88) to MP 72. The only exception in this area is a very small portion of Prime Farmland If Irrigated approximately 0.75 miles west of the highway at MP 84.5. The remainder of this segment, from MP 72 to MP 64 is almost entirely mapped in Prime Farmland If Irrigated and Farmland of Statewide Importance.

This segment passes through a fault line at approximately MP 72.25. This fault line runs in a northeast-southwest direction from south of Homestead Lake through the east side of Medicine Lake and beyond. No areas of seismic hazard are visible on the map in this segment.

3.2.3 MT 16 – Medicine Lake to Plentywood

Geologic and prime farmland features for this segment are presented in Figures 5 and 6. Approximately half of the corridor in this segment passes through land designated as either Prime Farmland If Irrigated or Farmland of Statewide Importance. No fault lines or seismic hazard areas are visible in this segment.

3.2.4 MT 16 – Plentywood to the Canadian Border

Geologic and prime farmland features for this segment are presented in Figure 6. Approximately half of the corridor in this segment passes through land designated as either Prime Farmland If Irrigated or

Farmland of Statewide Importance. No fault lines are visible in this segment. It appears as though this segment passes through an area of low seismic hazard.

3.3 Surface Water and Groundwater

Available GIS data were reviewed and field observations made to identify the location of surface water bodies within the corridor study area, including rivers, streams, lakes, or reservoirs.

Information on streams within the study area was obtained from the Montana Department of Environmental Quality (MDEQ). Section 303, subsection "d" of the Clean Water Act requires the State of Montana to develop a list, subject to U.S. Environmental Protection Agency (USEPA) approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, MDEQ determines the causes and sources of pollutants in a subbasin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL) (MDEQ, 2006).

A TMDL sets maximum pollutant levels in a watershed. The TMDLs become the basis for implementation plans to restore the water quality to a level that supports its designated beneficial uses. The implementation plans identify and describe pollutant controls and management measures to be undertaken (such as best management practices), the mechanisms by which the selected measures would be put into action, and the individuals and entities responsible for implementation projects. A TMDL has not yet been written for this watershed. When one is prepared and an implementation plan is in place, any construction practices would have to comply with the requirements set forth in the plan.

The study corridor travels through two watersheds:

- The Charlie-Little Muddy watershed (Hydrologic Unit Code: 10060005)
- The Big Muddy watershed (Hydrologic Unit Code: 10060006)

The Charlie-Little Muddy watershed is listed in the Final 2004 Integrated 303(d)/305(b) Report by MDEQ. The Charlie-Little Muddy watershed was listed as a Category 5 watershed, meaning that one or more applicable beneficial uses have been assessed as being impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat. Beneficial uses that apply to this watershed include aquatic life, warm fisheries (non-salmonid), drinking water sources, recreation, agriculture, and industry. Probable causes of impairment include thermal modification and flow alteration by hydromodification and flow regulation/modification.

The Big Muddy watershed is also listed in the Final 2004 Integrated 303(d)/305(b) Report by MDEQ and is also listed as a Category 5 watershed. Beneficial uses that apply to this watershed include aquatic life, warm fisheries (non-salmonid), and recreation. Probable causes and sources of impairment are summarized in Table 8.

Table 8. 303(d) Listing Summary for the Big Muddy Watershed

Waterbody Segment	Probable Causes of Impairment	Probable Sources of Impairment
Big Muddy Creek from the northern Fort Peck Reservation boundary to the mouth (Missouri River)	• Siltation • Flow alteration • Other habitat alterations • Riparian degradation • Nutrients	• Agriculture • Grazing related sources • Flow regulation/modification • Hydromodification

Waterbody Segment	Probable Causes of Impairment	Probable Sources of Impairment
Big Muddy Creek from Canada to the northern boundary of the Fort Peck Indian Reservation	• Nutrients • Organic enrichment/Low dissolved oxygen • Other habitat alterations • Riparian degradation • Metals • Copper • Lead • Mercury • Zinc	• Agriculture • Crop-related sources • Grazing related sources

River systems were also reviewed to determine 'Wild and Scenic' designation. The Wild and Scenic Rivers Act, created by Congress in 1968, provided for the protection of certain selected rivers, and their immediate environments, that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The U.S. National Park Service (NPS) website was accessed for information on river segments that may be located within the study area with wild and scenic designation. No Wild and Scenic Rivers have been designated within the study corridor (NPS, 2006).

Public water supplies were researched via the Digital Atlas of Montana, by searching a 1 mile radius around the applicable highway (MNRIS, 2006). Public water supplies are researched in the environmental scan to identify areas where additional protection for drinking water supplies could be required during construction. Public water supplies will be discussed for each segment in the following sections.

A sole source aquifer is one that has been designated by the USEPA as the sole or principal source of drinking water for an area. As such, designated sole source aquifers receive special protection. No sole source aquifers have been designated anywhere in the study corridor (USEPA, 2006b).

3.3.1 US 2 – North Dakota State Line to Culbertson

Figure 7 presents surface water features in the US 2 North Dakota State Line to Culbertson segment. Table 9 summarizes GIS data and field observations made in this segment for regarding surface water resources.

Table 9. Surface Water in the US 2 - North Dakota State Line to Culbertson Segment

Approximate Milepost	Description
645-648	The highway crosses Clover Creek several times
646	Missouri River passes within approximately 1.5 miles south of US 2 in the town of Culbertson
649	Highway crossing of Little Muddy Creek from north
652	Highway crossing of Redbank Creek from north
655	Highway crossing of unnamed intermittent creek
657-659	Several meandering channels of Shotgun Creek on north side of highway, including at least 2 crossing the highway
659	Shotgun Creek crosses the highway several times and passes through the town of Bainville

Approximate Milepost	Description
659	Shotgun reservoir is located approximately 1.5 miles north of the highway
660	The highway crosses an unnamed intermittent creek, which then flows along the south side of the highway from approximately mileposts 660-661
661.5	Highway crossing of unnamed intermittent creek
663.5	Highway crossing of unnamed intermittent creek
664.5	Highway crossing of unnamed intermittent creek
666	Highway crossing of unnamed intermittent creek

This corridor segment is located in the Charlie-Little Muddy watershed (Hydrologic Unit Code: 10060005) (USEPA, 2006a). This watershed and its 303(d) listing status are discussed in Section 3.3.

Public water supplies found within one mile of this segment include the Town of Culbertson and the State Line Casino in Bainville. The information is summarized in Table 10.

Table 10. Public Water Supplies in the US 2 - North Dakota State Line to Culbertson Segment

Owner Name	Source Name	Source Type	City	Resident Population Served	Non-Res Population Served	PWS ID
Town of Culbertson	Plant Reservoir	Surface Water	Culbertson	796	0	MT0000192
Town of Culbertson	Missouri River	Surface Water	Culbertson	796	0	MT0000192
State Line Casino	Well #1	Groundwater	Bainville	0	30	MT0001640

3.3.2 MT 16 – Culbertson to Medicine Lake

Figures 8 and 9 present surface water features in the MT 16 – Culbertson to Medicine Lake segment. Table 11 summarizes GIS data and field observations made for this segment regarding surface water resources.

Table 11. Surface Water in the MT 16 – Culbertson to Medicine Lake Segment

Approximate Milepost	Description
83	Highway crossing of unnamed intermittent creek
76	Highway crossing of Sheep Creek, a tributary to Homestead Lake (part of Medicine Lake NWR)
73	Highway crossing of Lost Creek, a tributary to Homestead Lake (part of Medicine Lake NWR)
72	Highway crossing of McCabe Creek, a tributary to Lost Creek and Homestead Lake
71-69	Highway crosses several unnamed intermittent drainages
65.5	Highway crosses Medicine Lake (part of Medicine Lake NWR)

The first three miles approximately north of Culbertson are located within the Charlie-Little Muddy watershed. The remainder of this corridor segment is located in the Big Muddy watershed. These watersheds and their 303(d) listing status are discussed in Section 3.3.

Medicine Lake and its surrounding water impoundments are dependent on runoff provided from spring snowmelt and heavy summer thundershowers. The two main tributaries are Lake Creek to the northeast and Big Muddy Creek to the north. (USFWS, 1992)

Public water supplies found within one mile of this segment includes the Medicine Lake NWR. The information is summarized in Table 12.

Table 12. Public Water Supplies in the MT 16 – Culbertson to Medicine Lake Segment

Owner Name	Source Name	Source Type	City	Resident Population Served	Non-Res Population Served	PWS ID
Medicine Lake NWR	Well	Groundwater	Medicine Lake	7	50	MT0003713

3.3.3 MT 16 – Medicine Lake to Plentywood

Figures 9 and 10 present surface water features for the MT 16 – Medicine Lake to Plentywood segment. Table 13 summarizes GIS data and field observations made for this segment regarding water resources.

Table 13. Surface Water in the MT 16 – Medicine Lake to Plentywood Segment

Approximate Milepost	Description
63-47	Big Muddy Creek flows north-south within 1-2 miles west of highway. It serves as the Fort Peck Indian Reservation border in many areas
63-59	Highway crosses several unnamed intermittent drainages
60-53	Reserve Creek flows north-south within 0-1.5 miles west of highway
57-55	Highway crosses several unnamed intermittent drainages
51.5	Highway crossing of Antelope Creek
47	Highway crossing of unnamed intermittent creek
46.5	Highway crossing of Ator Creek
42	Highway crossing of unnamed intermittent drainage at Mill St.

This corridor segment is located in the Big Muddy watershed. This watershed and its 303(d) listing status are discussed in Section 3.3.

Public water supplies found within one mile of this segment are summarized in Table 14.

Table 14. Public Water Supplies in the MT 16 – Medicine Lake to Plentywood Segment

Owner Name	Source Name	Source Type	City	Resident Population Served	Non-Res Population Served	PWS ID
Reserve Bar	Well	Groundwater	Reserve	0	30	MT0002040
Antelope Water and Sewer	Well #1	Groundwater	Antelope	58	0	MT0003203
Antelope Water and Sewer	Well #2	Groundwater	Antelope	58	0	MT0003203
Plentywood Water Dept	Well #10	Groundwater	Plentywood	2,136	0	MT0000306
Plentywood Water Dept	Well #10a	Groundwater	Plentywood	2,136	0	MT0000306
Blue Moon	Well #1	Groundwater	Plentywood	0	150	MT0001664
Dr Debelle	Well #2	Groundwater	Plentywood	0	50	MT0001669
Zeidler Hardware	Northeast MT Water Cond	Purchased	Plentywood	0	50	MT0003680

3.3.4 MT 16 – Plentywood to the Canadian Border

Figure 10 presents surface water features in the MT 16 – Plentywood to the Canadian Border segment. Table 15 summarizes GIS data and field observations made for this segment regarding surface water resources.

Table 15. Surface Water in the MT 16 – Plentywood to the Canadian Border Segment

Approximate Milepost	Description
1	Box Elder Reservoir is 1 mile east of highway
2.5	Unnamed intermittent drainage on the east side of the highway
4	Highway crossing of unnamed intermittent drainage
5.5	Highway crossing of unnamed intermittent drainage
7	Highway crossing of McCoy Creek
7-12	Scattered medium to small intermittent and/or perennial surface water ponds (potholes) on both sides of highway, mainly on west side
12-15	Scattered small intermittent and/or perennial surface water ponds (potholes) on both sides of highway

This corridor segment is located in the Big Muddy watershed. This watershed and its 303(d) listing status are discussed in Section 3.3.

Public water supplies found within one mile of this segment are summarized in Table 16.

Table 16. Public Water Supplies in the MT 16 – Plentywood to the Canadian Border Segment

Owner Name	Source Name	Source Type	City	Resident Population Served	Non-Res Population Served	PWS ID
Raymond Border Sta	New Well #2	Groundwater	Raymond	14	25	MT0002767

3.4 Floodplains and Floodways

Floodplains are land areas adjacent to rivers and streams that are subject to recurring inundation. Because of their connection to river systems, floodplains often contain wetlands and other areas vital to a diverse and healthy ecosystem. The floodway is the channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot. Floodways are only delineated in communities where detailed hydraulic analyses have been completed. The floodway is contained within the floodplain.

Flood insurance rate maps (FIRMs) define the regulatory boundaries of floodplains along the rivers or streams where FIRM studies have been conducted. These flood insurance studies are maintained by the Federal Emergency Management Agency (FEMA) to determine the "existence and severity of flood hazards" and to help administer both the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

Federal laws regulating floodplain and flood impacts are contained within the National Flood Insurance Program (NFIP), a program managed by FEMA. Through the NFIP, FEMA has established minimum federal standards for floodplain regulation that are administered locally by cities and counties, with state oversight. Project related activities within the floodway would be required to demonstrate that any rise in the 100-year flood elevation following the project would be allowable under the NFIP.

Floodplain information was downloaded where available and used to identify mapped flood zones (Figures 7 through 10). GIS-based FEMA flood maps are available primarily along US 2 is association with the Missouri River. The study corridor passes through these flood zones near Culbertson (MP 645). MT-16 passes through a mapped flood zone just north of Culbertson near MP 88. This is likely a tributary to the Missouri River that passes through the area. MT-16 passes by, but does not cross, two mapped flood zones near the Town of Froid (MP 76 and MP 73). These flood zones are located on the west side of the highway, associated with Sheep Creek and Lost Creek, respectively. These creeks are tributaries to Homestead Lake.

The incorporated Town of Culbertson is not included in GIS-based FEMA flood mapping. A FIRM was downloaded from the FEMA map website (map 300067B, dated May 15, 1986) and reviewed for flood zones mapped within the study corridor as it passes through Culbertson (Appendix E). A floodplain (Flood Zone A) is mapped at the intersection of US 2 and MT 16 and surrounding areas. This floodplain continues north on MT 16 to the limits of Culbertson at 8th Street North and east on US 2 to 2nd Avenue East.

No FEMA floodplains are mapped in Sheridan County in or near the study corridor.

It should be noted that potential floodplains that were identified using FEMA maps are not intended to substitute for an extensive calculation of floodplain impacts. Potential floodplain impacts will have to be assessed prior to any construction along the highway corridor.

3.5 Wetlands

The U.S. Army Corps of Engineers defines wetlands as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

USFWS defines wetland as 'lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or that land is covered by shallow water.' Wetlands must have one or more of the following three attributes:

- At least periodically, the land supports hydrophytes (a plant adapted to growing in or under the surface of water);
- The substrate is predominantly undrained hydric soil; and
- The substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

The U.S. Army Corps of Engineers requires that all three of the above attributes be present for an area to be considered a wetland, and for the wetland to by hydraulically connected to a Water of the US for it to be considered under the jurisdiction of Clean Water Act. This will be the definition with which future highway planning would be concerned. Digitally available wetlands maps, however, were only available at this planning stage from the USFWS, and therefore the USFWS definition of a wetland is applicable when referring to Figures 7 through 10 of this document.

The USFWS produces and provides information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats and other wildlife habitats, known as the National Wetland Inventory (NWI). NWI information was used in the study corridor to identify riverine and palustrine wetlands along the corridor. Riverine wetlands are associated with rivers and streams. Palustrine wetlands may be isolated or connected wet areas and include marshes, swamps, and bogs.

The study corridor is located within the highly productive prairie pothole region that extends from southern Canada through northeast Montana, the Dakotas, and western Minnesota. The region contains many thousands of small wetlands that produce over 50 percent of the waterfowl originating in the contiguous United States. Marshes, shelterbelts, croplands, grasslands, and large water bodies provide both migration and nesting habitat for a vast array of wildlife. (USFWS, 1992)

The Northeastern Montana Wetlands Management District, managed by Medicine Lake NWR staff, consists of over 40 separate waterfowl production areas totaling in excess of 10,000 acres in a three-county area. These areas have been acquired and are intensively managed primarily for waterfowl production. An additional 7,500 privately-owned wetland acres within the district are also protected from burning, fill, and drainage by perpetual wetland easements with private landowners. (USFWS, 1992)

Drought occurs periodically in this region. This drying of wetland basins is important to maintain the productivity of the wetlands. Nutrients that are accumulated in dead plant matter decompose in the presence of oxygen and return to the soil. With the return of the wet cycle comes an increased growth of aquatic vegetation and invertebrates. (USFWS, 1992)

NWI maps were reviewed in conjunction with field reconnaissance conducted along the corridor. Field reconnaissance helped to confirm or deny the presence of NWI wetlands and identify some that were not mapped. Field reconnaissance for wetlands included observations from the roadway for vegetation, hydrology, and local topography. It should be noted that potential wetlands that were identified using NWI maps and windshield observations are not intended to substitute for wetland delineation. Wetland delineation will have to be conducted prior to any construction along the highway corridor.

3.5.1 US 2 – North Dakota State Line to Culbertson

A summary of wetlands identified through NWI maps and field observations for the US 2 – North Dakota State Line to Culbertson segment is presented in Table 17. Figure 7 presents wetlands mapped in this segment.

Table 17. Wetlands in the US 2 – North Dakota State Line to Culbertson Segment

Approximate Milepost	Description
648	An area on the north side of the highway mapped as wetlands
649-655	Large tracts of wetland areas are located on the south side of the highway, much associated with Clover Creek
650	A small mapped palustrine wetland area on the north side of the highway was not observed in the field
652-653	Some observed wet areas between the highway and the railroad (unmapped), in addition to riverine wetland areas on both sides of the highway
656-659	Scattered tracts of wetland areas within 1 mile of north side of highway
658.5-659	Large mapped wetland area on north side of highway
660-668	Many wetland areas associated with creeks and drainages
664.5	Wet ponded area (unmapped) observed on north side of highway
666	Wet area (unmapped) observed on north side of highway, and mapped wetland area observed on south side of highway

3.5.2 MT 16 – Culbertson to Medicine Lake

A summary of wetlands identified through NWI maps and field observations for the MT 16 – Culbertson to Medicine Lake segment is presented in Table 18. Figures 8 and 9 present wetlands mapped in this segment.

Table 18. Wetlands in the MT 16 – Culbertson to Medicine Lake Segment

Approximate Milepost	Description
88-84	Some small wetland areas associated with drainages
85-84	Wet area (unmapped) observed on east side of highway
84	Potential wet areas (unmapped) observed on both sides of highway associated with drainages
83	Wet areas (mapped and unmapped) observed crossing highway associated with a drainage
83-81	Scattered wetland areas within 1 mile of alignment
82-81.5	Mapped wetlands from west and along east side of highway not observed in field
79.5	Large wetland area approx. 1 mile east of highway
79	Wet area (unmapped) observed on east side of highway

Approximate Milepost	Description
78-77	Scattered wetland pothole areas within 1 mile of alignment
74	Wet area (unmapped) observed on west side of highway; feeds into mapped wetland area with duck boxes on east side of highway
72	Wet area (unmapped) observed crossing the highway toward Homestead Lake
71	Wet areas associated with small drainage on east side of highway
70.5	Wet area (unmapped) observed crossing the highway
65.5	Medicine Lake and associated wetland areas

3.5.3 MT 16 – Medicine Lake to Plentywood

A summary of wetlands identified through NWI maps and field observations for the MT 16 – Medicine Lake to Plentywood segment is presented in Table 19. Figures 9 and 10 present wetlands mapped in this segment.

Table 19. Wetlands in the MT 16 – Medicine Lake to Plentywood Segment

Approximate Milepost	Description
63-47	Wetland areas associated with Reserve and Big Muddy Creeks
62	Wet area (unmapped) observed crossing highway
60.5	Potential wet area (unmapped) observed crossing highway
60	Wet area (unmapped) observed on the west side of the highway
59.5	Potential wet area (unmapped) observed crossing highway
59	Small wetland area 0.5 mile west of highway
59-54	Few very small wetland pothole areas on east side of highway
53	Wet area associated with drainage from bluffs (unmapped) observed crossing highway
50-49	Few very small wetland pothole areas on east side of highway
48.5-48	Potential wet areas (unmapped) observed crossing highway
45	Mapped wetland area associated with drainage on east side of highway observed to extend to road (extended area unmapped)
42	Broad area of wetlands south of highway in Plentywood

3.5.4 MT 16 – Plentywood to the Canadian Border

A summary of wetlands identified through NWI maps and field observations for the MT 16 – Plentywood to the Canadian Border segment is presented in Table 20. Figure 10 presents wetlands mapped in this segment.

Table 20. Wetlands in the MT 16 – Plentywood to the Canadian Border Segment

Approximate Milepost	Description
2.5	Potential wet area (unmapped) observed on east side of highway
4	Potential wet areas (unmapped) observed crossing highway
1-6	Scattered pothole wetlands on both sides of the highway
4	Some wetland areas (unmapped) observed crossing highway
5.5	Some wetland areas crossing highway
11	Mapped wetland area on west side of highway is hayed
12	Mapped wetland area on west side of highway is hayed
7	Wetland crossing highway
7-12	Scattered medium to small pothole wetlands on both sides of highway, mainly on west side
12-15	Scattered small pothole wetlands on both sides of highway

3.6 Hazardous Waste Areas

USEPA and MDEQ maintain several searchable databases on their websites to determine the presence of hazardous waste sites or hazardous materials generators in a particular area. For this environmental scan, several databases were queried for Sheridan and Roosevelt counties. Databases researched included:

- USEPA National Priorities List (NPL) sites in Montana (USEPA, 2006c)
- USEPA Comprehensive Environmental Response, Compensation, and Liability Index System (CERCLIS) (USEPA, 2006d)
- USEPA Resource Conservation and Recovery Act (RCRA) – database "RCRA Info" (USEPA, 2006d)
- USEPA Toxics Release Inventory (TRI) (USEPA, 2006e)
- National Response Center (NRC) database of oil, chemical, radiological, and biological discharges to the environment (NRC, 2006)
- MDEQ query service for abandoned mines, leaking underground storage tanks (LUST), petroleum tank releases, and remediation response sites (MDEQ, 2006b)

The NPL and CERCLIS database searches returned no sites within the study corridor.

Several abandoned mine sites are located in Roosevelt and Sheridan Counties. However, the database does not provide specific location information. According to MDT, most of these sites are open cut permits for aggregate. GIS-based mine sites are mapped in Figure 16.

The information recovered from the remaining databases is summarized by segment in the following sections. Observations were also made during field reconnaissance activities to note those areas that may be hazardous. GIS-based hazardous waste site locations, such as LUST sites, remediation response sites, and Petroleum Tank Release Compensation Board (petroleum board) sites, are presented in Figures 11 through 14.

Field reconnaissance for hazardous materials included observations from the roadway for aboveground tanks, businesses that may use hazardous substances, and obvious hazardous conditions. It should be noted that potential hazardous materials that were identified using searchable databases and windshield observations are not intended to substitute for hazardous materials due diligence prior. Environmental site assessments will have to be conducted prior to any land acquisition along the highway corridor.

3.6.1 US 2 – North Dakota State Line to Culbertson

3.6.1.1 RCRA Info Database Search

Facilities identified in the RCRA Info database within the US 2 – North Dakota State Line to Culbertson segment are summarized in Table 21.

Table 21. RCRA Sites in the US 2 - North Dakota State Line to Culbertson Segment

Handler Name	City	Description
Arcus Transportation, Inc.	Culbertson	No information provided
Miller Oil Company	Culbertson	CESQG and Used Oil Program
Montola Growers, Inc.	Culbertson	CESQG, Major Air Emissions Reporter, TRI Reporter
Operational Maintenance Shop	Culbertson	CESQG, Underground Storage Tank Program
Phillips Petro Co Culbertson Compres	Culbertson	Natural Gas Liquid Extraction
Triple M Culbertson	Culbertson	Used Oil Program
Notes: CESQG = Conditional Exempt Small Quantity Generator		

3.6.1.2 TRI Database Search

Facilities identified in the TRI database within the US 2 – North Dakota State Line to Culbertson segment are summarized in Table 22.

Table 22. TRI Sites in the US 2 - North Dakota State Line to Culbertson Segment

Facility Name	City	Description
Montola Growers Inc.	Culbertson	Manufacturer of Shortening, Table Oils, Margarine, and Other Edible Fats And Oils Air Emitter of N-Hexane

3.6.1.3 NRC Database Search

Facilities identified in the NRC database within the US 2 – North Dakota State Line to Culbertson segment are summarized in Table 23.

Table 23. NRC Sites in the US 2 - North Dakota State Line to Culbertson Segment

Date	Suspected Responsible Party	City	Description
01/21/1994	True Oil	Culbertson	Hydrogen sulfide released to air due to pipeline leak

Date	Suspected Responsible Party	City	Description
06/03/1997	Transmontaigne Pipeline Co	Bainville	499 gallons of sodium nitrate solution released to soil due to equipment failure
01/05/2000	Eott Energy	US 2 near Williston (MT side)	Crude oil released to asphalt due to leaking tanker truck; area sanded to prevent migration
05/04/2003	Burlington Northern Santa Fe (BNSF) Railroad	Bainville	Leaking locomotive spilled 250-400 gallons of diesel between Minot, ND and Bainville, MT

3.6.1.4 LUST Database Search

Facilities identified in the LUST database within the US 2 – North Dakota State Line to Culbertson segment are summarized in Table 24. Figure 11 presents tank leaks in this segment.

Table 24. LUST Sites in the US 2 - North Dakota State Line to Culbertson Segment

Site Name	City	Active?	Confirmed Release Date	Resolved Date
Bjorge Oil & Trucking	Bainville	Yes	6/23/1999	Unresolved
Scot & Diane Panasuk	Bainville	No	9/6/1996	10/7/1996
Anderson Conoco Culbertson	Culbertson	No	11/19/1990	2/7/1991
Culbertson School Dist 17	Culbertson	No	7/12/1991	10/31/1991
Culbertson School Dist 17 Armory	Culbertson	No	6/23/1998	7/7/1999
Johnsens Cafe & Convenience Store	Culbertson	No	3/28/1996	4/29/1996
L & R Stop N Shop	Culbertson	No	6/25/1990	8/27/1990
Miller Oil Co Culbertson	Culbertson	Yes	2/18/1997	Unresolved
Missouri Breaks Truck Stop	Culbertson	No	3/5/1999	2/24/2004
Organizational Maint Shop 2	Culbertson	No	5/8/1989	5/22/1991
Roosevelt County	Culbertson	No	10/12/1994	4/7/1997
Svo Specialty Products	Culbertson	Yes	8/24/1996	Unresolved
Svo Specialty Products	Culbertson	No	5/16/1991	11/1/1996

3.6.1.5 Petroleum Tank Release Compensation Sites Database Search

The 1989 Montana Legislature created the Montana Petroleum Tank Release Compensation Board and the Montana Petroleum Tank Release Cleanup Fund. In 1991 the Legislature expanded coverage to certain petroleum storage tanks which were excluded in the 1989 legislation. The Fund was created to assist owners and/or operators of underground petroleum storage tanks in cleaning up petroleum contamination and compensating third party damages resulting from releases. Facilities identified in the Petroleum Tank Release Compensation Sites database within the US 2 – North Dakota State Line to

Culbertson segment are summarized in Table 25. Figure 11 presents petroleum board sites for this segment.

Table 25. Tank Release Sites in the US 2 - North Dakota State Line to Culbertson Segment

Facility Name	City	No. of Releases
The Welcome Stop	Bainville	1
SVO Specialty Products	Culbertson	1
L & R Stop & Shop	Culbertson	1

3.6.1.6 Remediation Response Sites Database Search

Facilities identified in the Remediation Response Sites database within the US 2 – North Dakota State Line to Culbertson segment are summarized in Table 26. Figure 11 presents remediation response sites for this segment.

Table 26. Remediation Sites in the US 2 - North Dakota State Line to Culbertson Segment

Site Name	City	Operation	Description
Burlington Northern Derailment Site Bainville	Bainville	Derailment occurred 09/28/80	Former train derailment/spill site

3.6.1.7 Field Observations

Observations made along the US 2 – North Dakota State Line to Culbertson segment regarding potential hazardous materials areas are summarized in Table 27.

Table 27. Hazardous Materials Observations in the US 2 - North Dakota State Line to Culbertson Segment

Approximate Milepost	Description
661-660	Scattered tank sites, a tank farm, and oil pumping and storage site (contents of tanks unknown, but assumed to be crude oil)
659	Observed “Welcome Stop” site, found in petroleum tank release compensation site database searches
657.5	Observed aboveground tanks on south side of road
653.5	Tank farm on south side of road, surrounded by mapped wetlands (hayed) (contents of tank unknown, but assumed to be crude oil)
646	Traction sand stockpile area
645.5	Montola Growers Inc., Custom Built Feeds, found in RCRA and TRI databases
644.5	Sinclair and Exxon (Oelker’s) on SW and SE corners of intersection

3.6.2 MT 16 – Culbertson to Medicine Lake

3.6.2.1 RCRA Info Database Search

Facilities identified in the RCRA Info database within the MT 16 – Culbertson to Medicine Lake segment are summarized in Table 28.

Table 28. RCRA Sites in the MT 16 – Culbertson to Medicine Lake Segment

Handler Name	City	Description
Koch-Krogedahl Station	Froid	Natural Gas Liquid Extraction, Minor Air Emissions Reporter
Medicine Lake Station	Medicine Lake	Natural Gas Liquid Extraction
Herman Oil Inc	Medicine Lake	CESQG
Notes: CESQG = Conditional Exempt Small Quantity Generator		

3.6.2.2 TRI Database Search

No facilities were identified in the TRI database within the MT 16 – Culbertson to Medicine Lake segment.

3.6.2.3 NRC Database Search

Facilities identified in the NRC database within the MT 16 – Culbertson to Medicine Lake segment are summarized in Table 29.

Table 29. NRC Sites in the MT 16 – Culbertson to Medicine Lake Segment

Date	Suspected Responsible Party	City	Description
01/04/1996	True Oil	Culbertson	Hydrogen sulfide released to air due to equipment failure

3.6.2.4 LUST Database Search

Facilities identified in the LUST database within the MT 16 – Culbertson to Medicine Lake segment are summarized in Table 30. Figures 12 and 13 present tank leaks for this segment.

Table 30. LUST Sites in the MT 16 – Culbertson to Medicine Lake Segment

Site Name	City	Active?	Confirmed Release Date	Resolved Date
USDA Ars Ag Research Service	Culbertson	No	8/2/1991	10/4/1991
Davidson Oil Co	Froid	No	7/12/1991	7/7/1992
Farmers Union Oil Co Froid	Froid	No	2/14/1991	1/28/1997
Froid School Teacherage	Froid	No	11/4/1996	9/30/1997
Mark B & Mary Linda Rudolph	Froid	No	10/4/1993	11/9/1993
Roosevelt County	Froid	No	10/12/1994	12/4/1995
Herman Oil Inc Medicine Lake	Medicine Lake	Yes	10/14/1997	unresolved
Medicine Lake NWR 4602269	Medicine Lake	No	8/15/1994	2/23/1998

3.6.2.5 Petroleum Tank Release Compensation Sites Database Search

No facilities were identified in the Petroleum Tank Release Compensation Sites database within the MT 16 – Culbertson to Medicine Lake segment (Figures 12 and 13).

3.6.2.6 Remediation Response Sites Database Search

Facilities identified in the Remediation Response Sites database within the MT 16 – Culbertson to Medicine Lake segment are summarized in Table 31. Remediation response sites in this segment are presented in Figures 12 and 13.

Table 31. Remediation Sites in the MT 16 – Culbertson to Medicine Lake Segment

Site Name	City	Operation	Description
Koch Hydrocarbon Co Krogadahl Station	Froid	Oil and gas production	LNAPL in 176-ft well.
Medicine Lake NWR	Medicine Lake		No information listed in database

3.6.2.7 Field Observations

Observations made along the MT 16 – Culbertson to Medicine Lake segment regarding potential hazardous materials areas are summarized in Table 32.

Table 32. Hazardous Materials Observations in the MT 16 – Culbertson to Medicine Lake Segment

Approximate Milepost	Description
82	Gas pipeline running northwest/southeast
82	MDT maintenance facility with snow blades, etc. with ASTs, ½ mile east of highway
81	Large aboveground storage tank (AST) observed approx. 0.4 miles west of highway
78	Junk/debris, old structures observed on west side of highway
76	Traction sand stockpile observed on west side of highway
76	Lagoons observed on west side of highway
76.25	Lodahl Farm and Auto Repair in Froid
69.5	Elevated AST's (assumed to be heating oil) observed on west side of highway
64.5	Automotive machine shop observed on west side of highway
64	Herman Oil site observed; listed in LUST database
64	Electric Co-op observed
64	Junkyard observed on east side of highway

3.6.3 MT 16 – Medicine Lake to Plentywood

3.6.3.1 RCRA Info Database Search

Facilities identified in the RCRA Info database within the MT 16 – Medicine Lake to Plentywood segment are summarized in Table 33.

Table 33. RCRA Sites in the MT 16 – Medicine Lake to Plentywood Segment

Handler Name	City	Description
Farmers Union Oil Company	Plentywood	CESQG, Underground Storage Tank Program
Steward and Stevenson	Plentywood	CESQG
Sunmark Expl Co Anderson 1406456	N. of Medicine Lake (MP 61)	No information provided
Triple M	Plentywood	CESQG, Used Oil Program, Underground Storage Tank Program
Notes: CESQG = Conditional Exempt Small Quantity Generator		

3.6.3.2 TRI Database Search

No facilities were identified in the TRI database within the MT 16 – Medicine Lake to Plentywood segment.

3.6.3.3 NRC Database Search

Facilities identified in the NRC database within the MT 16 – Medicine Lake to Plentywood segment are summarized in Table 34.

Table 34. NRC Sites in the MT 16 – Medicine Lake to Plentywood Segment

Date	Suspected Responsible Party	City	Description
09/23/1994	Power Fuels	MT 16, 3 miles north of Medicine Lake	250 barrels of crude oil released to drainage channel to Big Muddy Creek due to tanker spill; berm was built to contain spill
06/25/1998	Portal Pipeline	Reserve	100 barrels of crude oil released due to overfilling of AST; all material contained in tank dike

3.6.3.4 LUST Database Search

Facilities identified in the LUST database within the MT 16 – Medicine Lake to Plentywood segment are summarized in Table 35. Tank leaks for this segment are presented in Figures 13 and 14.

Table 35. LUST Sites in the MT 16 – Medicine Lake to Plentywood Segment

Site Name	City	Active?	Confirmed Release Date	Resolved Date
J & M Service	Reserve	No	6/28/1991	11/17/1992
Alfred K Tange	Plentywood	No	8/12/1992	8/19/1992

Site Name	City	Active?	Confirmed Release Date	Resolved Date
Alvin Newmnam	Plentywood	No	11/5/1993	2/8/1994
Auto Tech Services	Plentywood	No	9/10/2000	12/27/2000
Ben Franklin Store Mirps Inc	Plentywood	No	10/1/1996	10/8/1996
Billie C Hibbert	Plentywood	No	2/27/1992	4/23/1992
Charles Fay Chandler Sr	Plentywood	No	7/25/1993	9/10/1996
David G & Jane A Fulkerson	Plentywood	No	4/24/1990	5/14/1990
Donald Bolke Residence	Plentywood	Yes	6/3/1999	Not resolved
Dorothy Brockmier	Plentywood	No	12/8/1992	2/18/1993
Ernest Berland	Plentywood	No	7/11/1994	11/27/2000
Farmers Union Oil Co Plentywood	Plentywood	No	8/22/1996	9/30/1996
Farmers Union Oil Co Plentywood	Plentywood	No	1/23/1997	8/14/1997
Former Peterson Hardware	Plentywood	No	6/18/1997	7/22/1997
Gordon Overby	Plentywood	No	9/28/1993	10/29/1993
Harvey Carpenter	Plentywood	No	9/17/1990	10/24/1990
James Kisler	Plentywood	No	12/5/1991	1/16/1992
Kenneth D Collins Agency	Plentywood	No	11/8/1993	11/30/1993
Mary Johnson	Plentywood	No	9/28/1992	10/16/1992
Merlin Andersen	Plentywood	No	12/30/1991	5/8/1992
Miller Oil Co E Railroad Ave	Plentywood	Yes	11/4/2003	Not resolved
Montana Pioneer Manor Inc	Plentywood	No	5/9/1996	10/14/1998
Oddlaug Williams	Plentywood	No	12/19/1991	7/7/1992
Peavey Co Plentywood	Plentywood	No	11/27/1990	5/3/1991
Petersons Ready To Wear	Plentywood	No	8/28/1990	9/19/1990
Plentywood School Dist 20	Plentywood	No	9/14/1989	11/30/1990
Plw Enterprises	Plentywood	No	8/24/1993	10/6/1995
Rice Oil Co	Plentywood	No	12/23/1993	2/24/1994

Site Name	City	Active?	Confirmed Release Date	Resolved Date
Shackelford	Plentywood	No	10/11/1991	7/7/1992
Triple M Oil	Plentywood	No	7/28/2000	10/5/2000
Western Implement	Plentywood	No	10/16/1991	8/21/1996
Williston Scobey Transfer Plentywood	Plentywood	No	9/26/1990	8/31/1992

3.6.3.5 Petroleum Tank Release Compensation Sites Database Search

Facilities identified in the Petroleum Tank Release Compensation Sites database within the MT 16 – Medicine Lake to Plentywood segment are summarized in Table 36. Petroleum board sites in this segment are presented in Figures 13 and 14.

Table 36. Tank Release Sites in the MT 16 – Medicine Lake to Plentywood Segment

Facility Name	City	No. of Releases
PLW Enterprises	Plentywood	1
Auto Tech Services	Plentywood	1
Williston Scobey Transfer Plentywood	Plentywood	1
Triple M Oil	Plentywood	1
Shackelford	Plentywood	1
Peavey Co.	Plentywood	1

3.6.3.6 Remediation Response Sites Database Search

Facilities identified in the Remediation Response Sites database within the MT 16 – Medicine Lake to Plentywood segment are summarized in Table 37. Remediation response sites for this segment are presented in Figures 13 and 14.

Table 37. Remediation Sites in the MT 16 – Medicine Lake to Plentywood Segment

Site Name	City	Operation	Description
Bolke Residence	Plentywood		Private residence. non-regulated heating oil tank spill.

3.6.3.7 Field Observations

Observations made along the MT 16 – Medicine Lake to Plentywood segment regarding potential hazardous materials areas are summarized in Table 38.

Table 38. Hazardous Materials Observations in the MT 16 – Medicine Lake to Plentywood Segment

Approximate Milepost	Description
62	Sludge pond and 10 ASTs observed on west side of highway

Approximate Milepost	Description
59	Oil ASTs observed on west side of highway (assumed to be crude oil)
57	Tank farm observed on east side of highway (contents unknown but assumed to be crude oil)
50	Auto body shop observed in Antelope on east side of highway
44.5	Columbia Grain - grain elevator observed on west side of highway
42.1	Tank leak and petroleum board site mapped in Plentywood at corner of Broadmore St. not observed
42	Miller Oil Company (gas and oil) observed in Plentywood at Monroe St.
41.9	Kum and Go gas station observed in Plentywood at Adams St.
41.7	Curtiss Farm and Auto (CarQuest) observed in Plentywood at Jackson St.
41.7	Prairie Automotive observed in Plentywood at 122 1st Ave (MT 16)
41.7	Sheridan Sheet Metal Heating observed in Plentywood at 116 1st Ave
41.6	Supervalu observed in Plentywood at Main
41.6	Northern Wheel Alignment Service observed in Plentywood (S. Jefferson)
41.6	Old Exxon observed in Plentywood at Jefferson
41.3	MDT maintenance facility observed at southeast corner of MT 16 and MT 5

3.6.4 MT 16 – Plentywood to the Canadian Border

3.6.4.1 RCRA Info Database Search

No facilities were identified in the RCRA Info database within the MT 16 – Plentywood to the Canadian Border segment.

3.6.4.2 TRI Database Search

No facilities were identified in the TRI database within the MT 16 – Plentywood to the Canadian Border segment.

3.6.4.3 NRC Database Search

No facilities were identified in the NRC database within the MT 16 – Plentywood to the Canadian Border segment.

3.6.4.4 LUST Database Search

Facilities identified in the LUST database within the MT 16 – Plentywood to the Canadian Border segment are summarized in Table 39. Tank leaks in this segment are presented in Figure 14.

Table 39. LUST Sites in the MT 16 –Plentywood to the Canadian Border Segment

Site Name	City	Active?	Confirmed Release Date	Resolved Date
Border Port of Entry	Raymond	No	10/30/1996	1/16/1997

3.6.4.5 Petroleum Tank Release Compensation Sites Database Search

No facilities were identified in the Petroleum Tank Release Compensation Sites database within the MT 16 – Plentywood to the Canadian Border segment (Figure 14).

3.6.4.6 Remediation Response Sites Database Search

No facilities were identified in the Remediation Response Sites database within the MT 16 – Plentywood to the Canadian Border segment (Figure 14).

3.6.4.7 Field Observations

Observations made along the MT 16 – Plentywood to the Canadian Border segment regarding potential hazardous materials areas are summarized in Table 40.

Table 40. Hazardous Materials Observations in the MT 16 – Plentywood to the Canadian Border Segment

Approximate Milepost	Description
0.0	Cooper Tire observed in Plentywood (northeast corner of MT 16 and MT 5)
0.0	Welding shop observed in Plentywood (northwest corner of MT 16 and MT 5)
0.1	CanAm Convenience Store and Gas observed in Plentywood (west side of 16)
0.2	Homeland Security building observed in Plentywood on west side of highway

4 Biological Resources

Available information was reviewed to identify potential wildlife resources within the corridor study area, including the federal lists of threatened and endangered species and state lists of species of concern. Because biological resources tend to encompass more regional areas, and the study corridor exhibits many of the same types of habitat throughout with a few exceptions, this section is organized by types of biological resources rather than by study corridor segments. These discussions are then broken down by what is expected to occur in each of Roosevelt and Sheridan counties, as species information is typically grouped by county. The study corridor segments are summarized by county in Table 41.

Table 41. Study Corridor Segments by County

County	Segments Located within County
Roosevelt	US 2 – North Dakota to Culbertson (ALL) MT 16 – Culbertson to Medicine Lake (MP 88.5-72)
Sheridan	MT 16 – Culbertson to Medicine Lake (MP 72-64) MT 16 – Medicine Lake to Plentywood (ALL) MT 16 – Plentywood to Canadian Border (ALL)

Field reconnaissance for biological resources included observations from the roadway for signage indicating wildlife crossings, constructed habitat such as bird boxes, and direct wildlife observations. It should be noted that potential biological resources that were identified using available MFWP data and windshield observations are not intended to substitute for an extensive biological evaluation. Wetland

Consultation with USFWS will have to be conducted prior to any construction along the highway corridor and will likely result in the preparation of a biological assessment.

4.1 Fish and Wildlife

The study corridor lies within plains grassland habitat. Antelope and mule deer inhabit the open and rougher terrain. White-tailed deer are found along rivers and streams. The productive Prairie Pothole region produces thousands of ducks and geese. Pheasants are found in agricultural areas, and native sharp-tailed and sage grouse are plentiful in grassy and prairie habitat. The Missouri River is host to a wide variety of fish, including brown trout, whitefish, northern pike, rainbow trout, sturgeon, and yellow perch.

According to available GIS data, the entire study corridor falls within white tail deer range, antelope range, and Hungarian partridge range. Various portions of the study corridor fall within pheasant habitat. Sharp-tail grouse ranges through most of the corridor, except for areas just north and east of Culbertson. Turkey range is near, but not inside of the study corridor, being mainly associated with the Missouri River south of Culbertson. Signs of wildlife observed in the field are summarized in Table 42.

Table 42. Signs of Wildlife in the Study Corridor Observed in the Field

Approximate Milepost	Description
MT-16, MP 84	Deer crossing sign, southbound
MT-16, MP 74	Duck boxes observed in mapped wetland areas on east side of highway
MT-16, MP 67	Deer crossing sign, northbound

4.1.1 Threatened and Endangered Species

The federal list of endangered and threatened species is maintained by the USFWS. Species on this list receive protection under the Endangered Species Act (ESA). An 'endangered' species is one that is in danger of extinction throughout all or a significant portion of its range. A 'threatened' species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list.

The endangered, threatened, proposed, and candidate species list for Montana counties was downloaded from the USFWS website on August 29, 2006 (Appendix D). This list generally identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed.

4.1.1.1 Roosevelt County

Federally listed endangered, threatened, proposed, and candidate species for Roosevelt County are summarized in Table 43.

Table 43. Federally Listed ESA Species on Roosevelt County

Scientific Name	Common Name	Status
Scaphirhynchus albus	Pallid Sturgeon	Listed Endangered
Haliaeetus leucocephalus	Bald Eagle	Listed Threatened
Charadrius melodus	Piping Plover	Listed Threatened Critical Habitat Designated
Sterna antillarum athalassos	Interior Least Tern	Listed Endangered

Scientific Name	Common Name	Status
Grus Americana	Whooping Crane	Listed Endangered

The pallid sturgeon is the larger of the two species of sturgeon found east of the Continental Divide. In Montana, pallid sturgeon use large turbid streams including the Missouri and Yellowstone rivers. One of the most obvious detrimental changes in the pallid sturgeon environment was the damming of the Missouri River and several other important tributaries. While the Missouri River is generally over a mile from the study corridor, upstream and nearby land use practices may degrade water quality. (MFWP, 2006b)

The bald eagle is second in size of North American birds of prey only to the California Condor. The majority of birds nesting in Montana are found in the western third of the state; although breeding pairs may be found along many of the major rivers and lakes in the central portion of the state and along the Yellowstone and Missouri Rivers to the eastern prairie lands. East of the Continental Divide, the presence of bald eagles may be somewhat more seasonally dependent than in the western part of the state, for migrants from more northerly climes travel through Montana to reach their wintering grounds further south. Important year-round habitat includes wetlands, major water bodies, spring spawning streams, ungulate winter ranges and open water areas. (MFWP, 2006b) Occurrence of the bald eagle in the study corridor is possible, particularly during periods of seasonal migration in the spring and fall.

Piping Plovers are limited to the open shorelines of freshwater or alkaline lakes, reservoirs, rivers, or wetlands. The piping plover is generally a species of northern and northeastern Montana. This species is known to breed in Medicine Lake NWR, Sheridan County, and the Missouri River below Fort Peck Dam. The Piping Plover usually arrives in Montana in early May and leaves the state by late August. Most of the observations reported in the state are for breeding individuals, or for activity that suggests breeding. (MFWP, 2006b) Its seasonal presence on the Missouri River may indicate that construction windows could be imposed upon the US 2 – North Dakota State Line to Culbertson corridor segment.

Piping Plovers primarily select unvegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands. Vegetation, if present at all, consists of sparse, scattered clumps. Open shorelines and sandbars of rivers and large reservoirs in the eastern and north-central portions of the state provide prime breeding habitat. The alkali wetlands and lakes found in the northeastern corner of the state generally contain wide, unvegetated, gravelly, salt-encrusted beaches. Four specific geographic areas, recognized as providing critically important habitat and identified as essential for the conservation of the piping plover, have been designated as "Critical Habitat Units" in Montana. The designation of critical habitat may require federal agencies to develop special management actions affecting these sites. Unit 2 is identified as riverine habitat and includes the Missouri River just south of Wolf Point to the state line, encompassing habitat provided by the sparsely vegetated sandbars, and sandy or gravelly beaches along this stretch of the river. (MFWP, 2006b)

The interior least tern has similar habitat characteristics to the piping plover. The species breeds along the lower portions of the Missouri River below Fort Peck Dam, on the beaches of Fort Peck Reservoir, and on the Yellowstone River below Glendive. Most of the observations in the state have been recorded for breeding pairs, with few reported sightings of transient individuals. Spring arrival of the species occurs in mid-May, with departure in the fall generally occurring by mid-August. (MFWP, 2006b) Its seasonal presence on the Missouri River may indicate that construction windows could be imposed upon the US 2 – North Dakota to Culbertson corridor segment. Interior Least Terns nest on unvegetated sand-pebble beaches and islands of large reservoirs and rivers in northeastern and southeastern Montana, specifically the Yellowstone and Missouri river systems. These wide, open river channels, and lake and pothole shorelines provide the preferred characteristics for nesting terns. (MFWP, 2006b)

The whooping crane is the tallest bird of North America, reaching nearly five feet in height. Transient individual whooping cranes have been reported throughout the eastern portions of the state, with most of those records for Sheridan (Medicine Lake NWR) and Roosevelt counties. For the past 20 years, observations have been restricted to the northeast corner of the state. The birds observed in the eastern

corner of Montana are occasional migrants traveling through from the Arkansas population on journey to the breeding grounds in Alberta and the Northwest Territories. The whooping crane is known to fly through Montana during both spring and fall migration. The whooping crane has been observed in the marsh habitat present at Medicine Lake NWR. Observations of individual birds in other areas of the state include grain and stubble fields as well as wet meadows, wet prairie habitat, and freshwater marshes that are usually shallow and broad with safe roosting sites and nearby foraging opportunities. The whooping crane is not known to breed in the state. (MFWP, 2006b) The whooping crane could occur in the study corridor in Roosevelt County in grain and stubble fields and prairie wetland areas.

4.1.1.2 Sheridan County

Federally listed endangered, threatened, proposed, and candidate species for Sheridan County are summarized in Table 44.

Table 44. Federally Listed ESA Species in Sheridan County

Scientific Name	Common Name	Status
Haliaeetus leucocephalus	Bald Eagle	Listed Threatened
Charadrius melodus	Piping Plover	Listed Threatened Critical Habitat Designated
Grus Americana	Whooping Crane	Listed Endangered

See Section 4.1.1.1 for descriptions of these species. Occurrence of the bald eagle in the study corridor in Sheridan County is unlikely but possible. According to a brochure obtained from the Medicine Lake NWR, the refuge is located in the migrational corridor for bald eagles and that this rare species make occasional visits in the spring and fall (USFWS, 1992).

According to a Medicine Lake NWR brochure dated in 1992, the refuge supports an active breeding population of endangered piping plovers. Up to 30 pairs of the bird had nested on the refuge in years leading up to publishing of the brochure. (USFWS, 1992) The first unit of designated critical habitat for the piping plover, Unit 1, contains alkali lake and wetland habitat found in Sheridan County. (MFWP, 2006b) Therefore, any wetland habitat in the study corridor, in Sheridan County could be considered critical habitat for piping plover.

The whooping crane has been observed in the marsh habitat present at Medicine Lake NWR. Observations of individual birds in other areas of the state include grain and stubble fields as well as wet meadows, wet prairie habitat, and freshwater marshes that are usually shallow and broad with safe roosting sites and nearby foraging opportunities. The whooping crane is not known to breed in the state. (MFWP, 2006b) According to a brochure obtained from the Medicine Lake NWR, the refuge is located in the migrational corridor for whooping cranes and that this rare species make occasional visits in the spring and fall (USFWS, 1992).

4.1.2 Species of Concern

Montana Species of Concern are native animals breeding in the state that are considered to be “at risk” due to declining population trends, threats to their habitats, and/or restricted distribution. Designation of a species as a Montana Animal Species of Concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to direct limited resources to priority data collection needs and address conservation needs proactively. Each species is assigned a state rank that ranges from S1 (greatest concern) to S5 (least concern). Other state ranks include SU (unrankable due to insufficient information), SH (historically occurred), and SX (believed to be extinct). State ranks may be followed by modifiers, such as B (breeding) or N (nonbreeding).

The potential presence of each Species of Concern within the study corridor was determined by range maps and/or descriptions provided for each species. Table 45 provides a summary of Species of Concern that are thought to range in northeastern Montana. Figure 17 presents the number of species of concern present within each square mile in and near the study corridor.

Table 45. Animal Species of Concern Ranging in Northeastern Montana

Species Common Name	State Rank	Typical Habitat
Amphibians		
Great Plains Toad	S2	wetlands, floodplain pools
Northern Leopard Frog	S3	wetlands, floodplain pools
Plains Spadefoot	S3	wetlands, floodplain pools
Birds		
Alder Flycatcher	S1B	wetlands/shrublands
American White Pelican	S3B	lakes
Baird's Sparrow	S2B	grasslands
Bald Eagle	S3	riparian forest
Black Tern	S3B	wetlands
Black-and-white Warbler	S2S3B	deciduous forests
Black-crowned Night-heron	S3B	wetland/lake with emergent vegetation
Bobolink	S2B	moist grassland
Burrowing Owl	S2B	grasslands
Caspian Tern	S2B	large rivers and lakes
Chestnut-collared Longspur	S3B	grasslands
Common Loon	S2B	mountain lakes with emergent vegetation
Common Tern	S3B	large rivers and lakes
Eastern Bluebird	S2B	prairie woodlands
Ferruginous Hawk	S2B	sagebrush/grasslands
Forster's Tern	S2B	wetlands
Franklin's Gull	S3B	wetland/lake with emergent vegetation
Grasshopper Sparrow	S3B	grasslands
Greater Sage-grouse	S3	sagebrush
Interior Least Tern	S1B	large prairie rivers
Lark Bunting	S3B	sagebrush/grasslands
LeConte's Sparrow	S1S2B	prairie wetlands
Loggerhead Shrike	S3B	shrublands
Long-billed Curlew	S2B	grasslands
McCown's Longspur	S2B	grasslands
Northern Goshawk	S3	mixed conifer forest
Olive-side Flycatcher	S3B	early seral forest/shrub patches
Peregrine Falcon	S2B	cliffs
Piping Plover	S2B	prairie lake and river shoreline
Red-headed Woodpecker	S3B	riparian forest
Sedge Wren	S1B	prairie wetlands
Sprague's Pipit	S2B	grasslands
Swainson's Hawk	S3B	sage/grassland with woody vegetation
White-faced Ibis	S1B	wetland/lake with emergent vegetation
Yellow Rail	S1B	wetlands
Fish		
Blue Sucker	S2S3	large prairie rivers
Paddlefish	S1S2	large prairie rivers
Pallid Sturgeon	S1	large prairie rivers
Pearl Dace	S2	small prairie streams
Sauger	S2	large prairie rivers

Species Common Name	State Rank	Typical Habitat
Sicklefin Chub	S1	large prairie rivers
Sturgeon Chub	S2	large prairie rivers
Mammals		
Arctic Shrew	S1S3	wetlands
Black-tailed Prairie Dog	S3	grasslands
Preble's Shrew	S3	sagebrush/grasslands
Townsend's Big-eared Bat	S2	caves in forested habitats
Reptiles		
Greater Short-horned Lizard	S3	sandy/gravelly soils
Sagebrush Lizard	S3	rock outcrops
Smooth Green Snake	S2	wetlands
Western Hognose Snake	S2	floodplain friable soils

4.1.3 National Wildlife Refuges

The study corridor passes through the Medicine Lake National NWR. This refuge lies within the highly productive prairie pothole region that extends from southern Canada through northeast Montana, the Dakotas, and western Minnesota. The region contains many thousands of small wetlands that produce over 50 percent of the waterfowl originating in the contiguous United States. Medicine Lake NWR lies in the mixed grass and short grass prairie transition zone. Marshes, shelterbelts, croplands, grasslands, and large water bodies provide both migration and nesting habitat for a vast array of wildlife.

The refuge was established in 1935 and today consists of two units comprising 31,457 acres. The north unit contains the 8,700-acre Medicine Lake as wells as eight other small lakes. The Homestead Unit consists of the 1,280-acre Homestead Lake and adjacent uplands. The 11,360-acre Medicine Lake Wilderness Area was established by Congress in 1976. this area includes the main water body of the lake and the islands within. Also included is the 2,320-acre Sandhills Unit with its unique rolling hills, native grass, cactus, and clumps of chokecherry, buffalo berry, and buck brush.

Restoration of breeding population of Great Basin Canada geese was initiated in 1938 and supplemented with releases of additional birds up to 1957. By 1992, the resident refuge population of Canada geese was in excess of 1,000 birds with annual production of about 900 goslings.

Marsh and water areas of the refuge attract up to a quarter-million waterfowl during the spring and fall migration. Some of these species remain to nest on the refuge and produce up to 30,000 ducklings each year.

The refuge has one of the largest white pelican rookeries left in the United States. Over 2,000 pelicans are generally produced each year. The refuge islands provide secure nesting sites for other colonial nesters, including double-crested cormorants, California and ring-bills gulls, and great blue herons. Grebes, and many other marsh and shore birds nest in the vegetation and on the shoreline of the lakes.

Thousands of sandhill cranes arrive in the vicinity of the refuge for a short stop on their way south each October. The refuge is located in the migrational corridor of the endangered whooping crane, bald eagle, and peregrine falcon. The refuge also supports an active breeding population of endangered piping plovers.

Ring-necked pheasants are commonly seen along the refuge tour route. Pheasants find the heavy grass, alfalfa, and grain mixture (which is seeded for waterfowl nesting cover) to their liking. These stands of seeded grass also attract one of the largest white-tailed deer populations in northeast Montana.

The prairie grasslands are habitat for many prairie birds that are Montana Species of Concern, including burrowing owls, lark bunting, Baird's and LeConte's sparrows, chestnut-collared and McCown's longspurs, and occasionally the Sprague's pipit. Prairie grasslands are also home to short-eared owls and sharp-tailed grouse.

Neighboring farmers grow grain crops on designated refuge acres each year. The refuge share, approximately 25 percent, is left standing to provide food sources for many species of wildlife. (USFWS, 1992)

4.1.4 Block Management Areas

There are several BMAs located throughout the study corridor. Block Management is a cooperative effort between MFWP, private landowners, and public land management agencies to help landowners manage hunting activities and provide free public hunting access to private and isolated public lands. BMA cooperators receive benefits for providing free public hunting under certain terms. Each BMA is unique, and they range in size from 50 to more than 100,000 acres. The program is funded by portions of various license fees.

4.2 Vegetation

4.2.1 Threatened and Endangered Species

The federal list of endangered and threatened species is maintained by the USFWS. Species on this list receive protection under the ESA. The endangered, threatened, proposed, and candidate species list for Montana counties was downloaded from the USFWS website on August 29, 2006 (Appendix D). This list generally identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed. No vegetative species were listed for Roosevelt or Sheridan counties.

4.2.2 Species of Concern

The Montana Natural Heritage Program serves as the state's clearinghouse and principle information source for Species of Concern – plants and animals that are at risk or potentially at risk in Montana. The Plant Species of Concern report, dated June 2006, identifies 358 vascular plant Species of Concern based on information gathered from field inventories, publications, reports, herbarium specimens, and the knowledge of Montana botanists. These plants are listed by scientific names in a table that specifies county distributions, among other information. Those plants ranging in Roosevelt and Sheridan counties are summarized in the following sections. None of the plant Species of Concern in Roosevelt and Sheridan counties are considered endemic (not occurring elsewhere). Figure 17 presents the number of species of concern present within each square mile in and near the study corridor.

4.2.2.1 Roosevelt County

The Plant Species of Concern listed for Roosevelt County are summarized in Table 46.

Table 46. Plant Species of Concern in Roosevelt County

Plant Species Common Name	State Rank
Bractless Mentzelia	S1
Poison Suckleya	S1
Nannyberry	S1
Green Muhly (Species of Potential Concern)	S3

4.2.2.2 Sheridan County

The Plant Species of Concern listed for Sheridan County are summarized in Table 47.

Table 47. Plant Species of Concern in Sheridan County

Plant Species Common Name	State Rank
Ovalleaf Milkweed	S1
Chaffweed	S2
Smooth Goosefoot	S1
Fendler Cat's-eye	S2
Silky Prairie Clover	S1
Pale-spiked Lobelia	S1
Plains Phlox	S2
Mealy Primrose	S2
Many-headed Sedge	S1
Schweinitz' Flatsedge	S2
Slender Bulrush	S1
Northern Blue-eyed Grass	S1

4.2.3 Noxious Weeds

Noxious weeds degrade habitat, choke streams, crowd native plants, create fire hazards, poison and injure livestock and humans, and foul recreation sites. Areas with a history of disturbance are at particular risk of weed encroachment. There are 27 noxious weeds in Montana, as designated by the Montana Statewide Noxious Weed List. Of those 27, seven occur in Roosevelt and Sheridan counties. Sheridan County has designated Showy Milkweed and Baby's Breath as noxious in addition to the state-designated weeds. Additionally, two federally listed noxious weeds, Dodder and Broomrape, are reported to occur within the two-county area. Table 48 summarizes the noxious weed species known or reported to occur in the study corridor.

Table 48. Noxious Weed Species Known or Reported to Occur in the Study Corridor

Species	Status or Designation	County of Occurrence
Dodder *(Cuscata)*	Federal Designated Noxious Weed	Roosevelt
Broomrape *(Orobanche)*	Federal Designated Noxious Weed	Sheridan
Canada Thistle *(Cirsium arvense)*	State Designated Noxious Weed	Roosevelt, Sheridan
Field Bindweed *(Convolvulus arvensis)*	State Designated Noxious Weed	Roosevelt, Sheridan
Whitetop *(Cardaria draba)*	State Designated Noxious Weed	Sheridan
Leafy Spurge *(Euphorbia esula)*	State Designated Noxious Weed	Roosevelt, Sheridan
Dalmatian Toadflax *(Linaria dalmatica)*	State Designated Noxious Weed	Roosevelt, Sheridan
Common Tansy *(Tanacetum vulgare)*	State Designated Noxious Weed	Sheridan
Showy Milkweed *(Asclepias speciosa)*	County Designated Noxious Weed	Sheridan
Baby's Breath *(Gypsophila paniculata)*	County Designated Noxious Weed	Sheridan

Areas of brush clearing concern and Herbicide Free Areas are expected to occur within the Study Area. The MDT Maintenance Manual provides vegetation management guidance for brush clearing concerns along state roadways. The manual provides information on timing of maintenance and environmental best management practices for brush and tree removal. Weed districts in the state may develop an Herbicide Free Area Agreement for landowners who request that herbicides not be applied to roadside rights-of-way adjoining their property (MDT, 2006). Construction activities in the study corridor should also abide by the MDT "Roadside Vegetation Management Plan – Integrated Weed Management Component", dated April 2006. County Weed Control Supervisors and MDT Wolf Point Division vegetation management personnel should be contacted prior to any construction activities regarding specific locations.

5 Cultural Resources

The cultural resource review consisted of a review of the Montana NRHP for Roosevelt and Sheridan counties, receipt of comments from an MDT archaeologist regarding cultural resources (Appendix C), and field reconnaissance to provide a preliminary overview of potential resources within the study corridor. Figure 15 presents cultural resources in and near the study corridor.

Steve Platt, archaeologist for MDT, wrote a letter regarding cultural resources for the TRED study on July 12, 2006. This letter stated that "…MDT can expect there to be dozens of archaeological sites within the proposed corridor, many of them significant to our understanding of local and regional prehistory…In addition to archaeological resources we can expect to find historic homesteads and ranches within the proposed corridor, as well as historic buildings within the towns of Plentywood, Antelope, Medicine Lake, and Culbertson.

"Assinibone and Sioux members of the Fort Peck Indian Reservation will undoubtedly have an interest in some or all of the prehistoric sites I have discussed above. They likely continue to pursue a variety of traditional uses (plant gathering, hunting, religious practice, etc…) within the corridor as well. I am also certain that the Fort Peck Tribes will have a vested interest in Montana 16 and Highway 2 expansion from an economic perspective.

"Should MDT decide to pursue expansion of the Montana 16 and US 2 facilities MDT will need to proceed with a full blown cultural resource inventory, archaeological testing, and requisite consultation with the Fork Peck Tribes."

Information provided in the letter regarding cultural resources particular to each corridor segment are summarized in the following sections. Coordination will be required with the Fort Peck Indian Reservation during project development to determine the presence of traditional cultural properties and/or traditional hunting grounds.

5.1 US 2 – North Dakota State Line to Culbertson

One site was found listed on the NRHP that would fall within the US 2 – North Dakota State Line to Culbertson segment, and is summarized in Table 49.

Table 49. NRHP Sites in US 2 - North Dakota State Line to Culbertson Segment

Name	City	Listed Date	NR Reference No.
Hale's Filling Station and Grocery	Bainville	8/16/1994	94000864

Field observations made regarding cultural resources within this segment are summarized in Table 50.

Table 50. Cultural Resources Observed in US 2 - North Dakota State Line to Culbertson Segment

Approximate Milepost	Description
653.5	Older rural residence observed on north side of road
661	Historic marker about Fort Union observed on north side of road
663	Older rural residence observed on north side of road
668	Older rural residence observed on north side of road

MDT archeologists suggest that since this segment follows Clover Creek and then crosses Shotgun Creek, Red Bank Creek, and the Little Muddy, buried campsites in the alluvial soils along the margins of these creeks can be expected. (MDT, 2006)

5.2 MT 16 – Culbertson to Medicine Lake

One site was found listed on the NRHP that would fall within the MT 16 – Culbertson to Medicine Lake segment, and is summarized in Table 51.

Table 51. NRHP Sites in MT 16 – Culbertson to Medicine Lake Segment

Name	City	Listed Date	NR Reference No.
Tipi Hills	Medicine Lake	8/1/1975	75001085

Field observations made regarding cultural resources within this segment are summarized in Table 52.

Table 52. Cultural Resources Observed in MT 16 – Culbertson to Medicine Lake Segment

Approximate Milepost	Description
88	Older barn observed on west side of highway
82	Historic farm observed on east side of highway, residence not historic
76.5	Froid cemetery observed on west side of highway
76	Historic farm observed approx. 0.3 miles east of highway
76.25	Historic building observed in Froid across from Fjeseth Field (east side of highway)
75.5	Kvile cemetery observed on east side of highway
73.5	Older rural residence observed on east side of highway
70	Old barn observed on Route 350, 1 mile west of highway
68	Longview Farm observed on east side of highway - may be historic
67.5	Older house and old barn observed on west side of highway
64	Historic house in Medicine Lake observed on east side of highway
64	Older barn observed on Route 573, 0.5 miles east of highway

Approximate Milepost	Description
64	Older home observed on west side of highway

Additional cultural information for the area was found in literature from the Medicine Lake NWR. In the past, Native Americans frequently used this area around Medicine Lake as a campsite while pursuing migrant buffalo herds and waterfowl flocks. Many of the surrounding hills contain rings of stones that mark locations of ceremonial sites or campsites. (USFWS, 1992)

MDT archaeologists expect less in the way of prehistoric archaeology from Medicine Lake to Culbertson compared to other corridor segments, based on the flatter, drier terrain. The exception to this is within the three or four miles of the corridor north of Culbertson. There could be stone circle sites and/or bison kills north of Culbertson in the breaks leading down toward the Yellowstone River. (MDT, 2006)

5.3 MT 16 – Medicine Lake to Plentywood

No sites were found on the NRHP list that would fall within the MT 16 – Medicine Lake to Plentywood segment. Field observations made regarding cultural resources within this segment are summarized in Table 53.

Table 53. Cultural Resources Observed in MT 16 – Medicine Lake to Plentywood Segment

Approximate Milepost	Description
62.5	Marked historic site observed on west side of highway (Flandrem)
60	Older buildings observed on east side of highway
52.5	Old farm buildings in disrepair observed on west side of highway
51.5	Older buildings observed on east side of highway at Lowell Valley Rd
50	Old historic (possibly school?) building observed on east side of highway in Antelope
50	Older homes observed in Antelope
50	Historic structure observed on west side of highway in Antelope
49	Historic buildings observed on west side of highway
47.5	Old barn and outbuildings/new home observed on east side of highway
47.5	Old barn and outbuildings/new home observed on west side of highway
47	Older farm observed on east side of highway
46	Older home observed on west side of highway
45	Older home observed on west side of highway
43.5	Drive in movie theater observed on north side of highway

MDT archaeologists expect that since this segment follows the eastern side of the Big Muddy Valley, several archaeological sites may be expected. Where the road crosses perennial tributaries of Big Muddy Creek, several buried campsites should be expected. Buried campsites can be particularly important archaeological finds because cultural materials are almost always better preserved in buried rather than surface contexts. (MDT, 2006)

5.4 MT 16 – Plentywood to the Canadian Border

One site was found on the NRHP list that would fall within the MT 16 – Plentywood to the Canadian Border segment, and is summarized in Table 54.

Table 54. NRHP Sites in MT 16 – Plentywood to the Canadian Border Segment

Name	City	Listed Date	NR Reference No.
Raymond Grain Elevators Historic District	Raymond	10/27/1993	93001148

Field observations made regarding cultural resources within this segment are summarized in Table 55.

Table 55. Cultural Resources Observed in MT 16 – Plentywood to the Canadian Border Segment

Approximate Milepost	Description
1.5	Older barn observed on east side of highway
3	Older buildings observed on west side of highway
4	Older farmstead observed on east side of highway
7	Grain elevators observed on west side of highway, near Raymond
8	Older home observed on west side of highway
10	Old barn with new house observed on east side of highway
15	Old building in disrepair observed on east side of highway

MDT archaeologists expect to see several archaeological sites along the margins of the glacial potholes in this segment. (MDT, 2006)

6 Utilities

The following GIS-based utility information was reviewed in the study corridor (Figure 16):

- Petroleum pipelines
- Power lines
- Natural gas wells
- Injection wells
- Oil wells
- Water source wells
- Mine sites

6.1 US 2 – North Dakota State Line to Culbertson

A petroleum pipeline extends along the north side of this segment. A power line also extends along the north side of this segment, south of the petroleum pipeline. Natural gas wells are located approximately ½ mile south of the highway at approximate MP 658 and 645. Several oil wells are present in the area of the segment, including a cluster north of Bainville. It appears that only one oil well occurs within the 1-mile buffer of the highway, approximately 0.75 miles south of the highway near MP 653. No mine sites are located with the 1-mile buffer of the highway.

6.2 MT 16 – Culbertson to Medicine Lake

The petroleum pipeline that extends along the north side of US 2 crosses this segment near MP 87.5. The power line that also extends along the north side of US 2, south of the petroleum pipeline, crosses this segment near MP 88.5. A natural gas well is located in Froid, within ¼ mile east of the highway near MP 76. Another natural gas well is located in Medicine Lake, within ¾ mile west of the highway near MP 64. Fewer oil wells are present in the area of this segment. Two oil wells occur within the 1-mile buffer of the highway, located in Culbertson south of MP 87, on the east side of the highway. No mine sites are located with the 1-mile buffer of the highway.

6.3 MT 16 – Medicine Lake to Plentywood

A petroleum pipeline crosses this segment near MP 55. A power line crosses this segment near MP 62. Three natural gas wells are located within the one-mile buffer of the highway. One is located in Reserve, near MP 56, approximately one mile west of the highway. Another is located north of Antelope less than ¼ mile from the highway near MP 50.5. The third is located in Plentywood within ¼ mile of the highway near MP 41.5. Oil wells are present throughout the surrounding area of this segment. The first occurs near MP 63, approximately one mile east of the highway. Another is located near MP 58.5 approximately one mile west of the highway. One well is located near Reserve, near MP 56.5, approximately ¾ mile west of the highway. A cluster of oil wells occurs near MP 49, approximately ¾ mile west of the highway. No mine sites are located with the 1-mile buffer of the highway.

6.4 MT 16 – Plentywood to the Canadian Border

This segment does not cross any petroleum pipelines or power lines. A natural gas well is located in Raymond, within ½ mile west of the highway near MP 7. Fewer oil wells are present in the area of this segment, mainly clustered west of the Town of Raymond. No oil wells occur within the 1-mile buffer of the highway. No mine sites are located with the 1-mile buffer of the highway.

7 References

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Appendix A: Figures

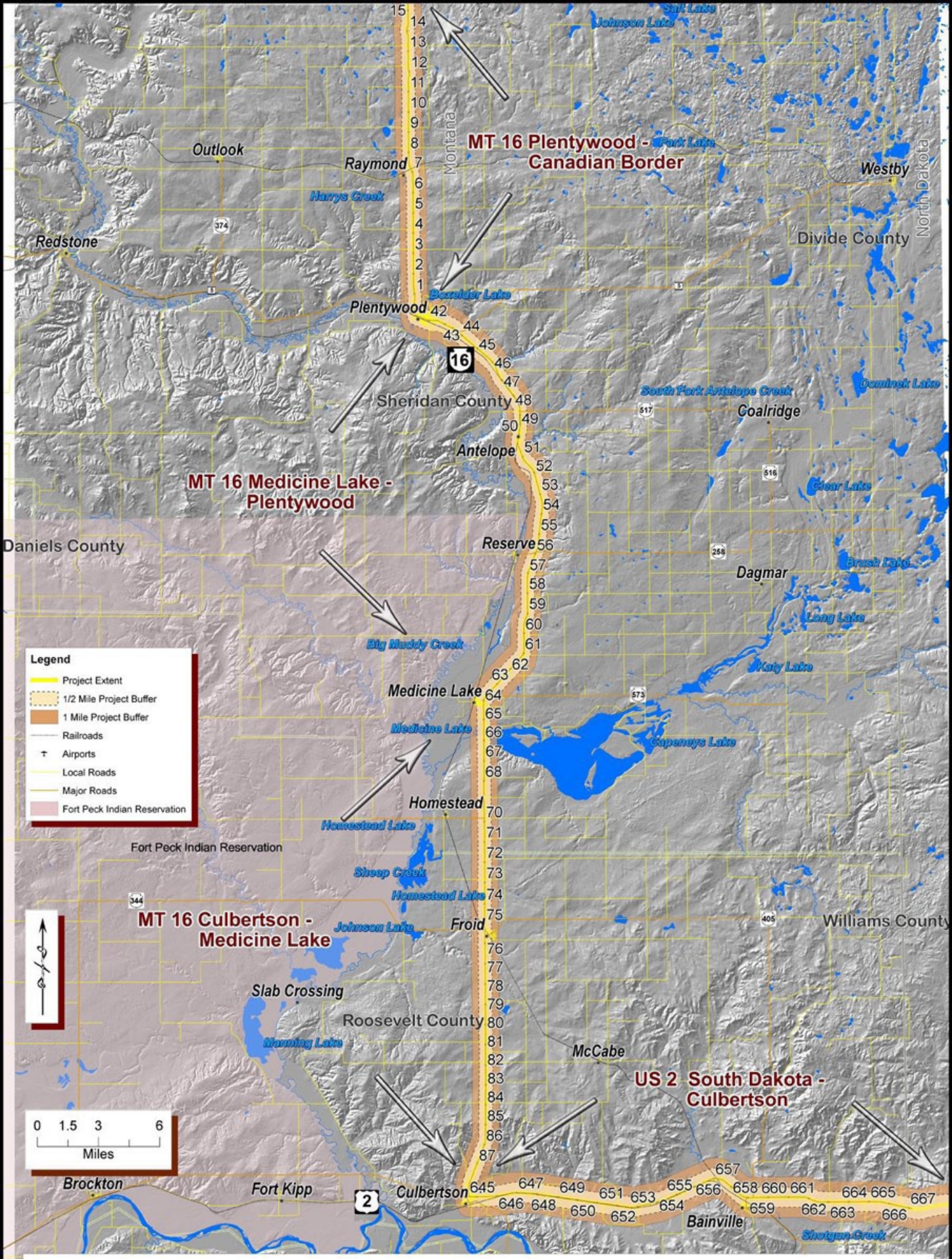

Figure 1:
Overview / Environmental Scan
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

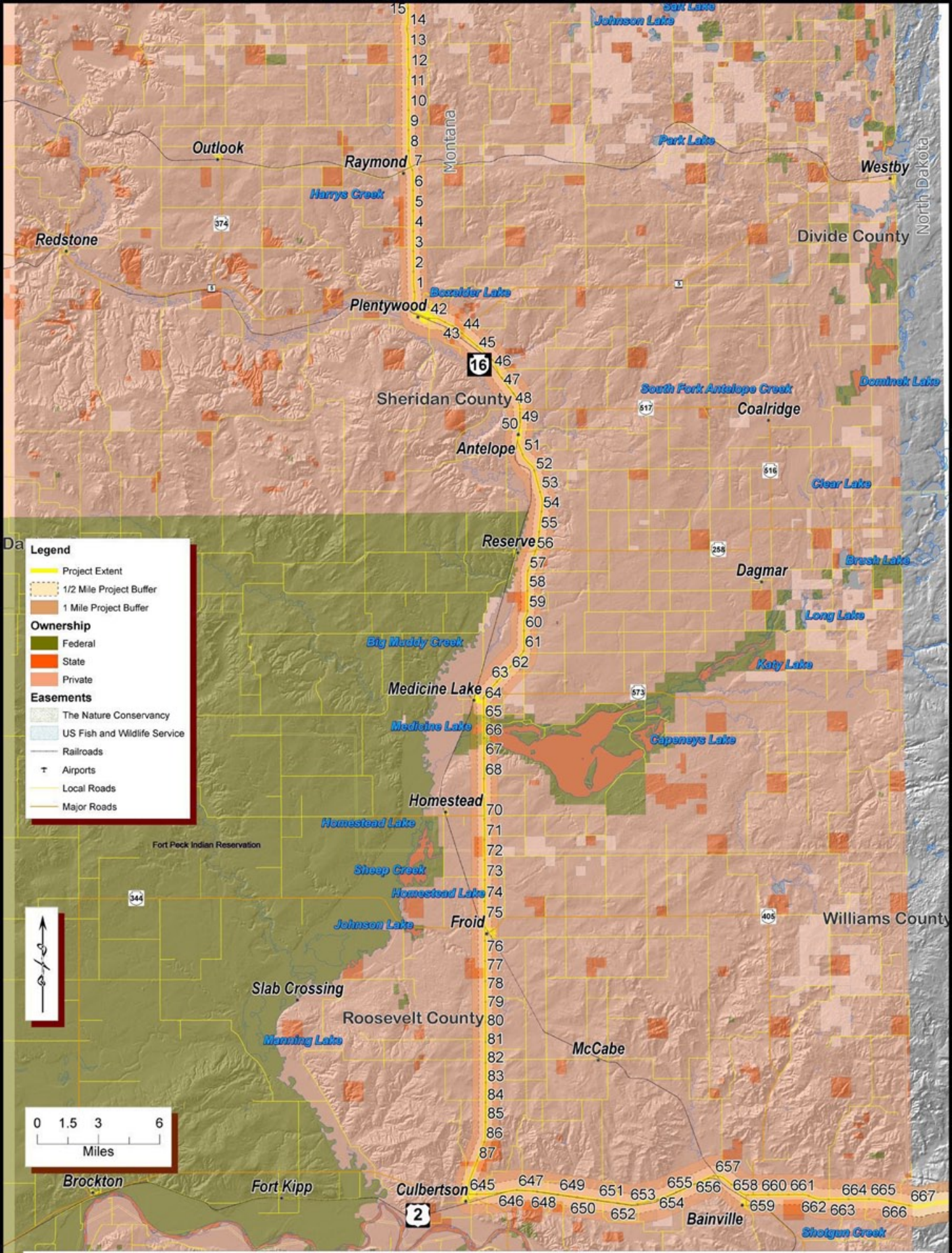

Figure 2:
Ownership / Environmental Scan
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

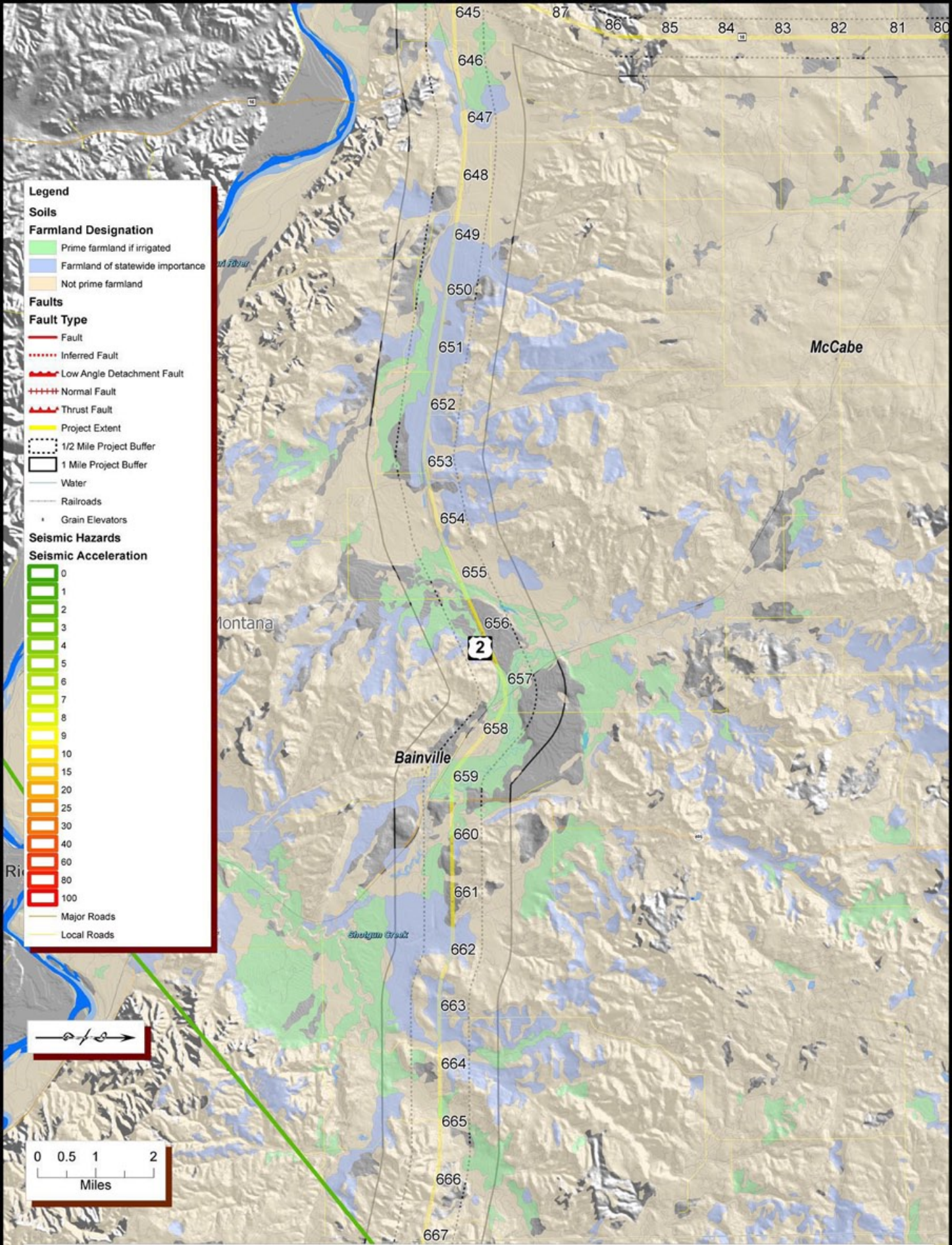

Figure 3:
Prime Farmland & Geology / North Dakota to Culbertson
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

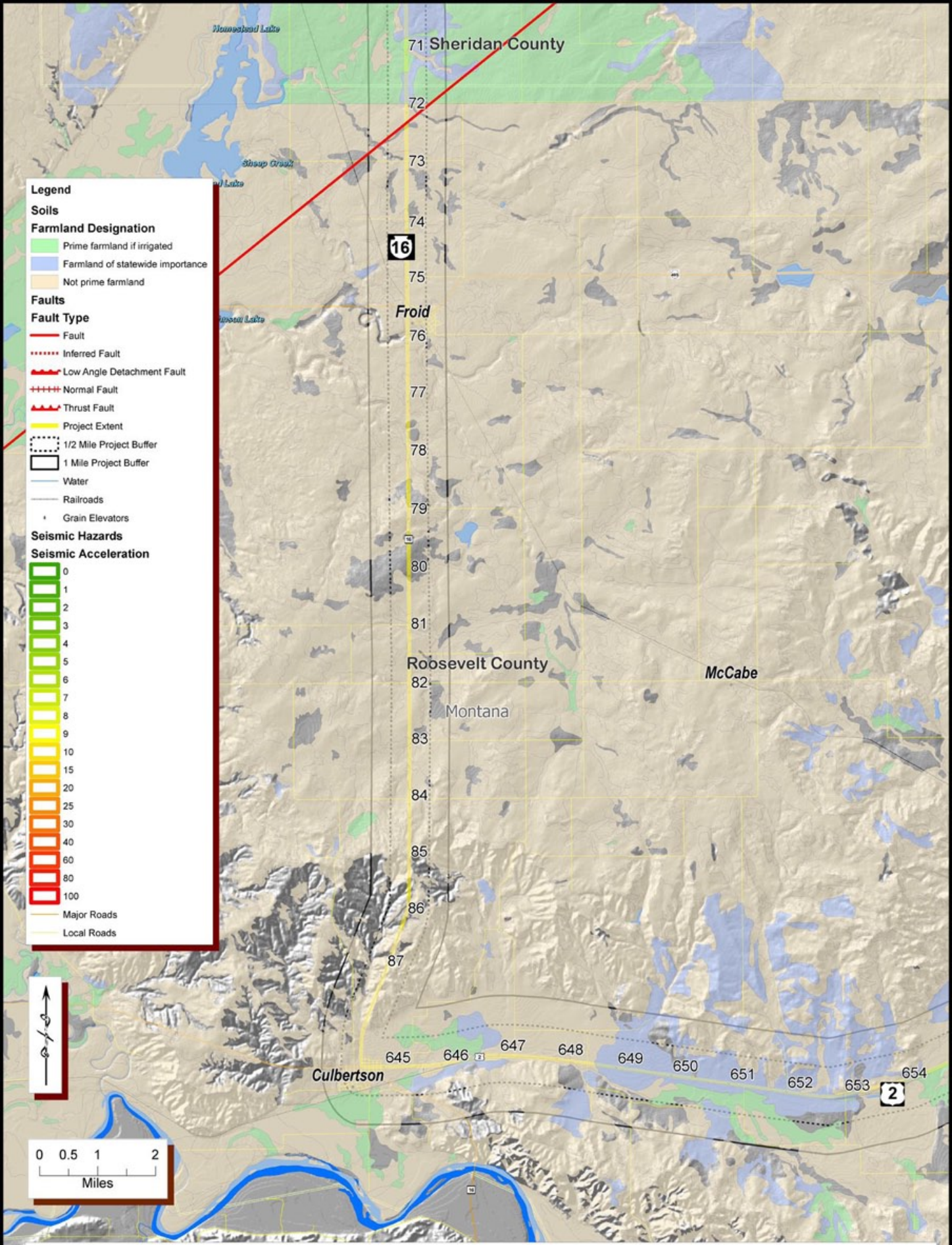

Figure 4:
Prime Farmland & Geology / Culbertson to MP 71
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

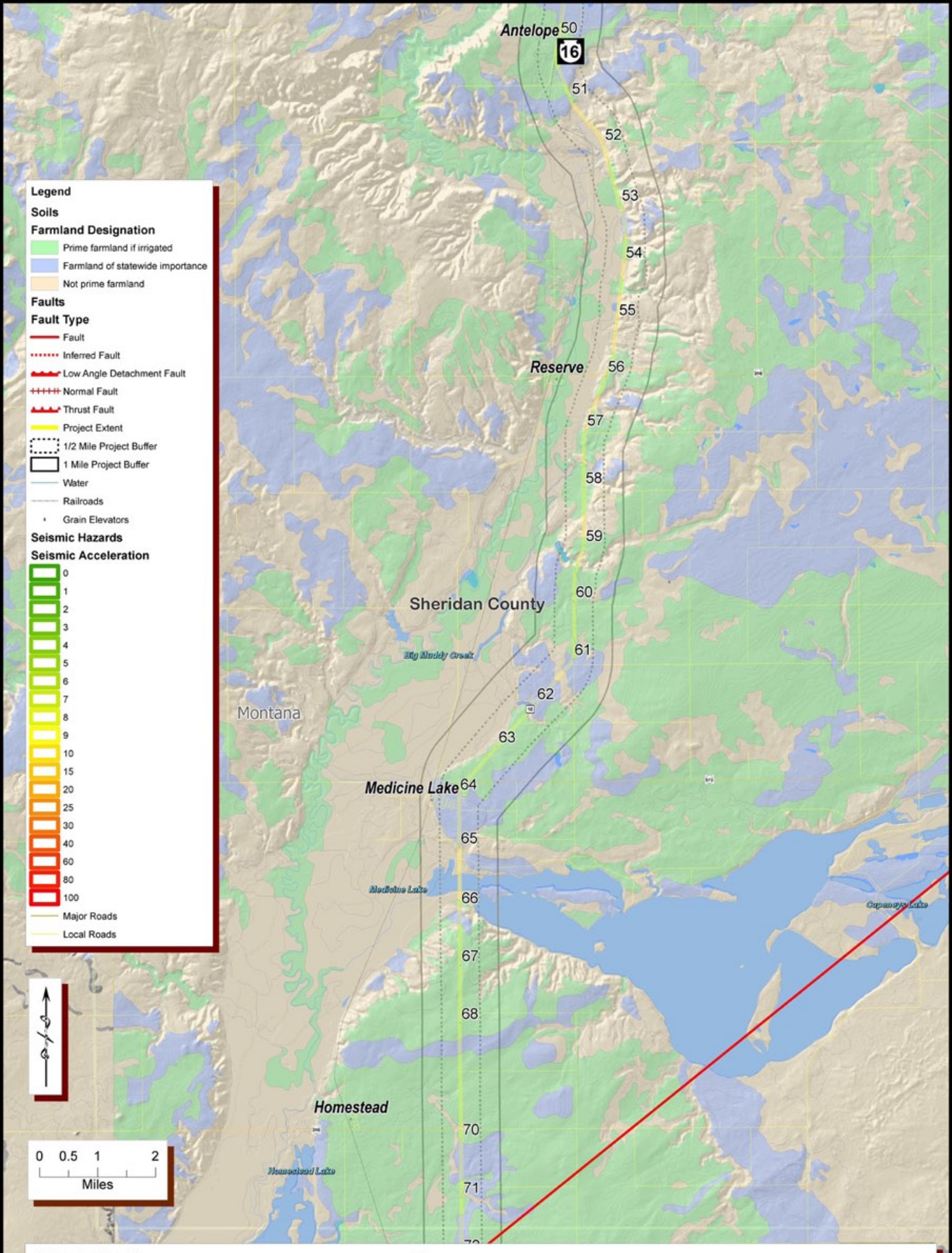

Figure 5:
Prime Farmland & Geology / MP 71 to Antelope
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

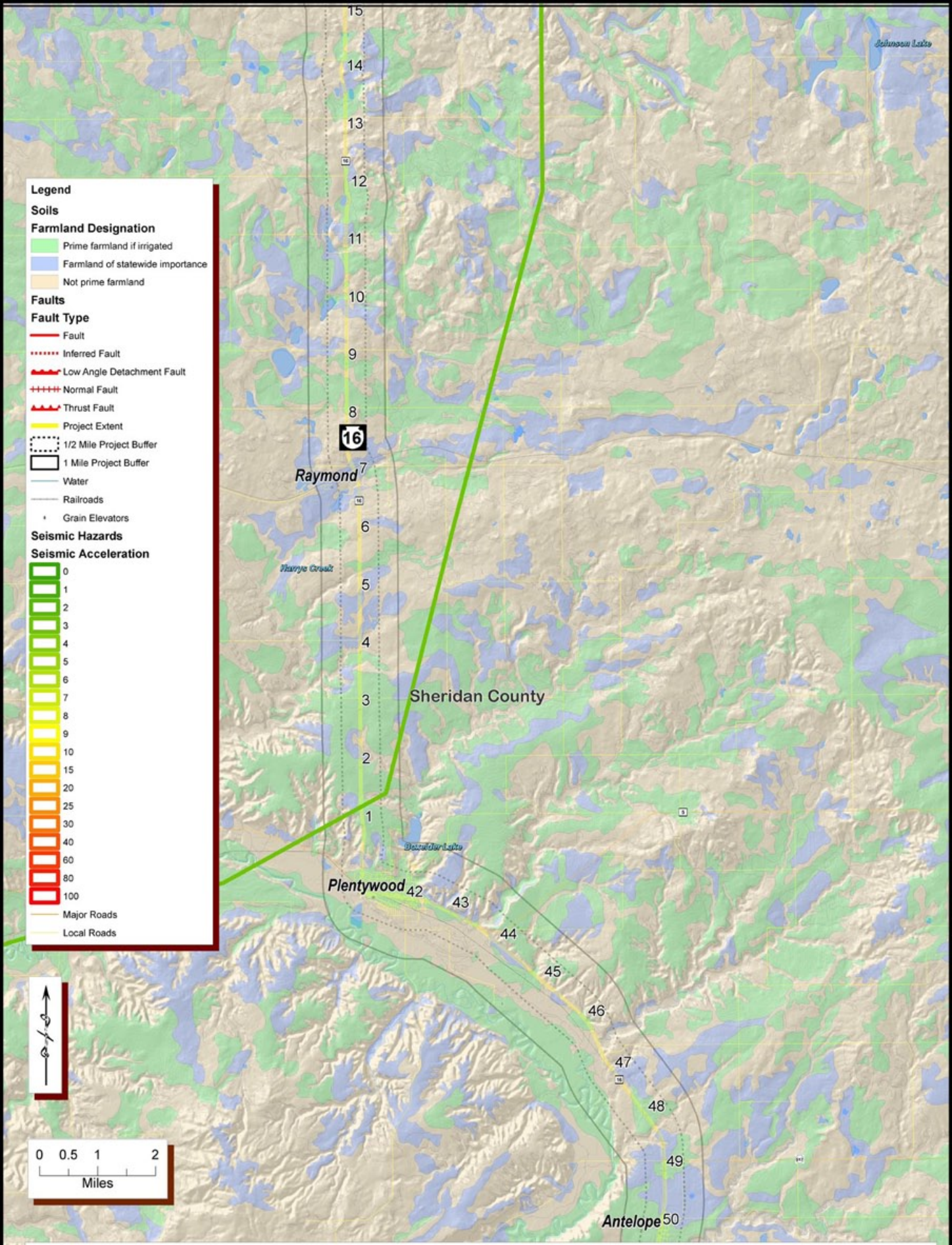

Figure 6 :
Prime Farmland & Geology / Antelope to Canada
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

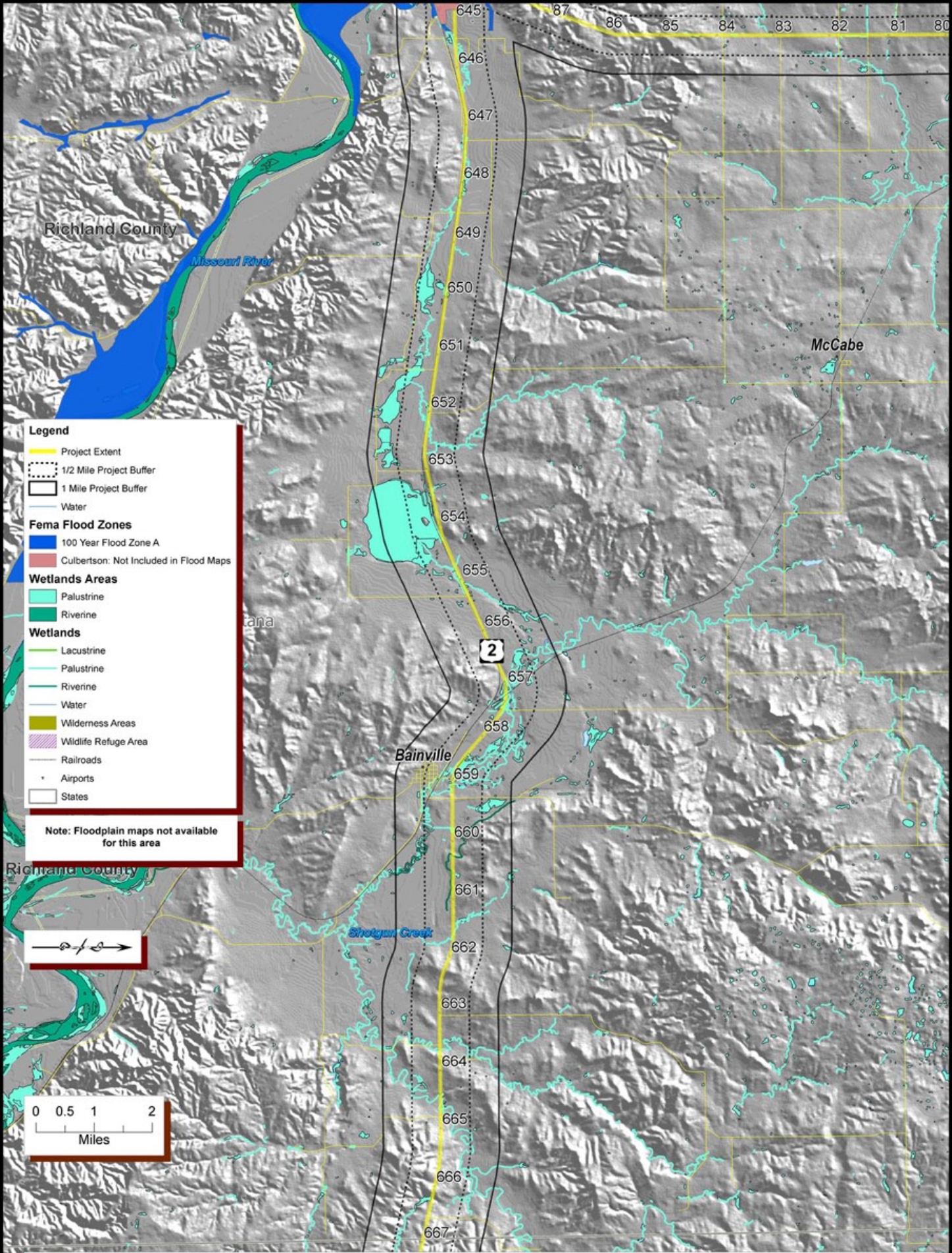

Figure 7:
Surface Water and Wetlands / North Dakota to Culbertson
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

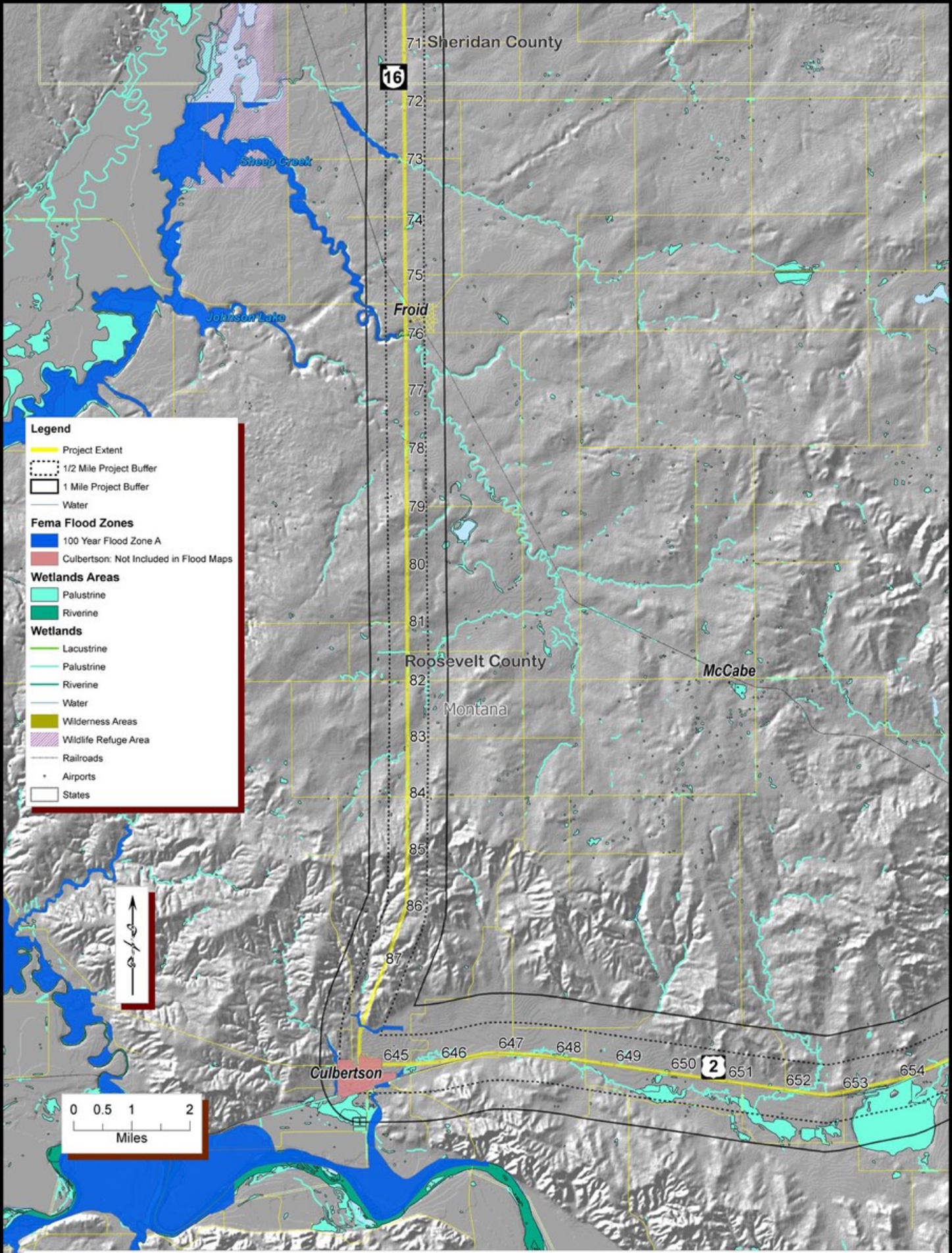

Figure 8:
Surface Water and Wetlands / Culbertson to MP 71
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

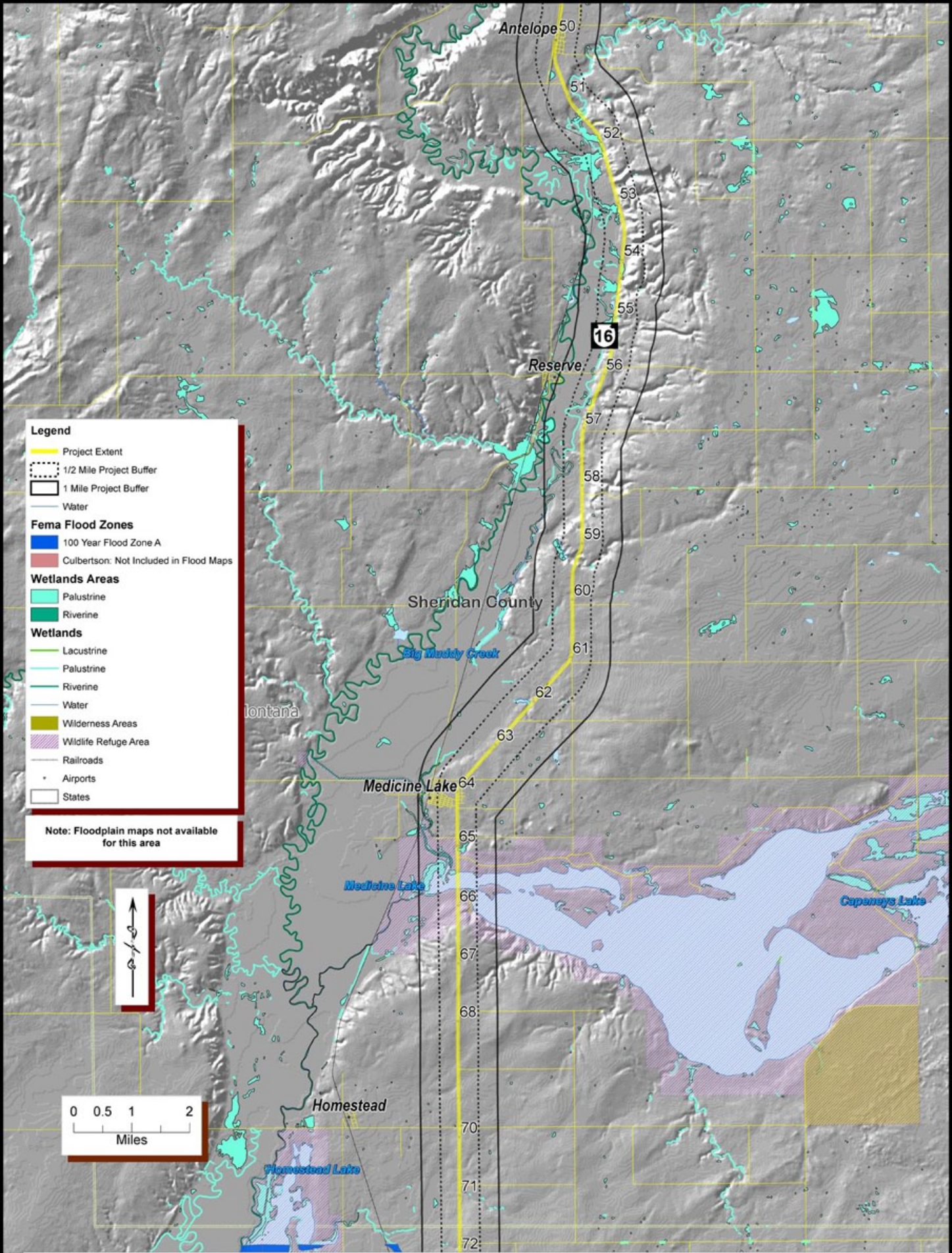

Figure 9:
Surface Water and Wetlands / MP 71 to Antelope
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

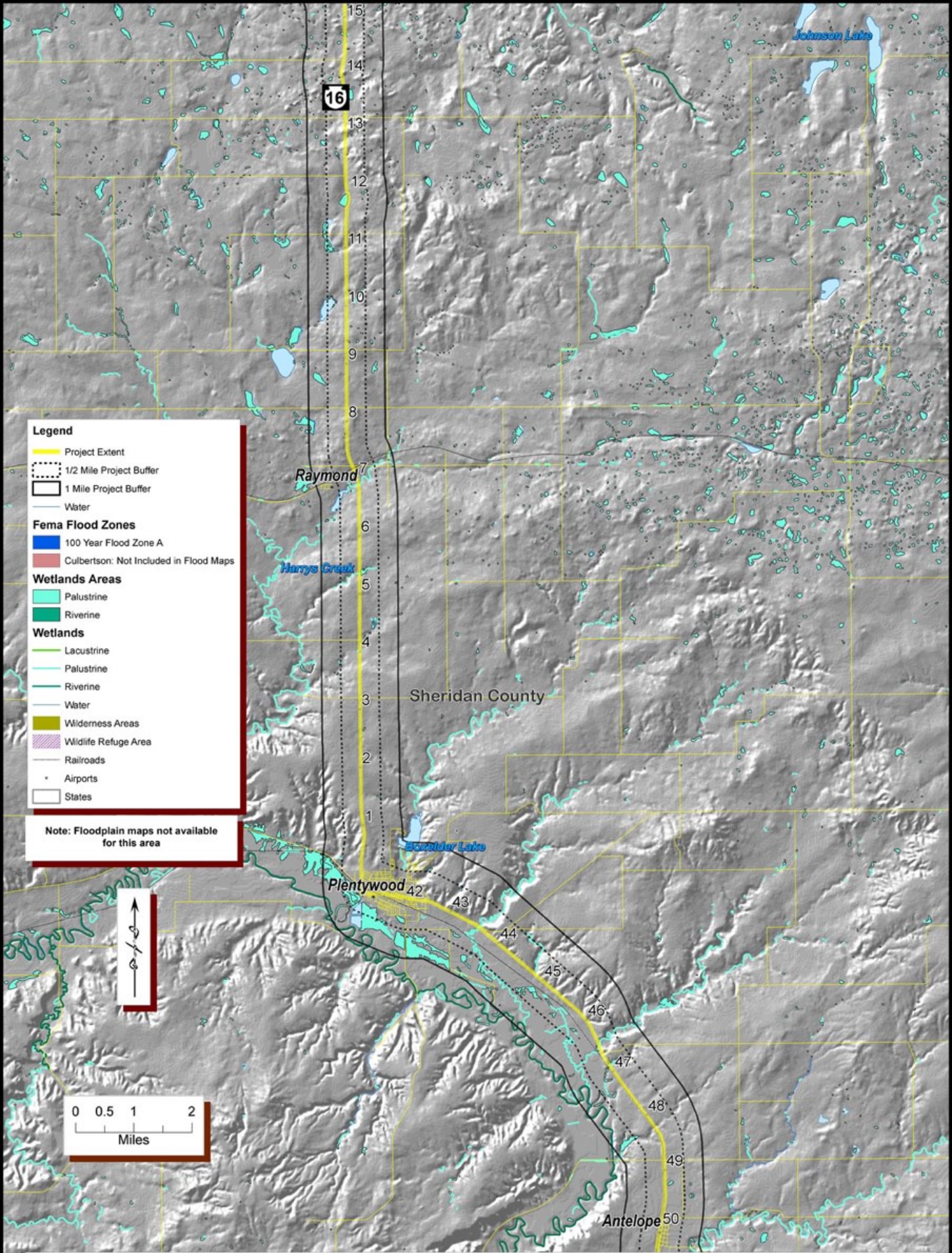

Figure 10:
Surface Water and Wetlands / Antelope to Canada
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

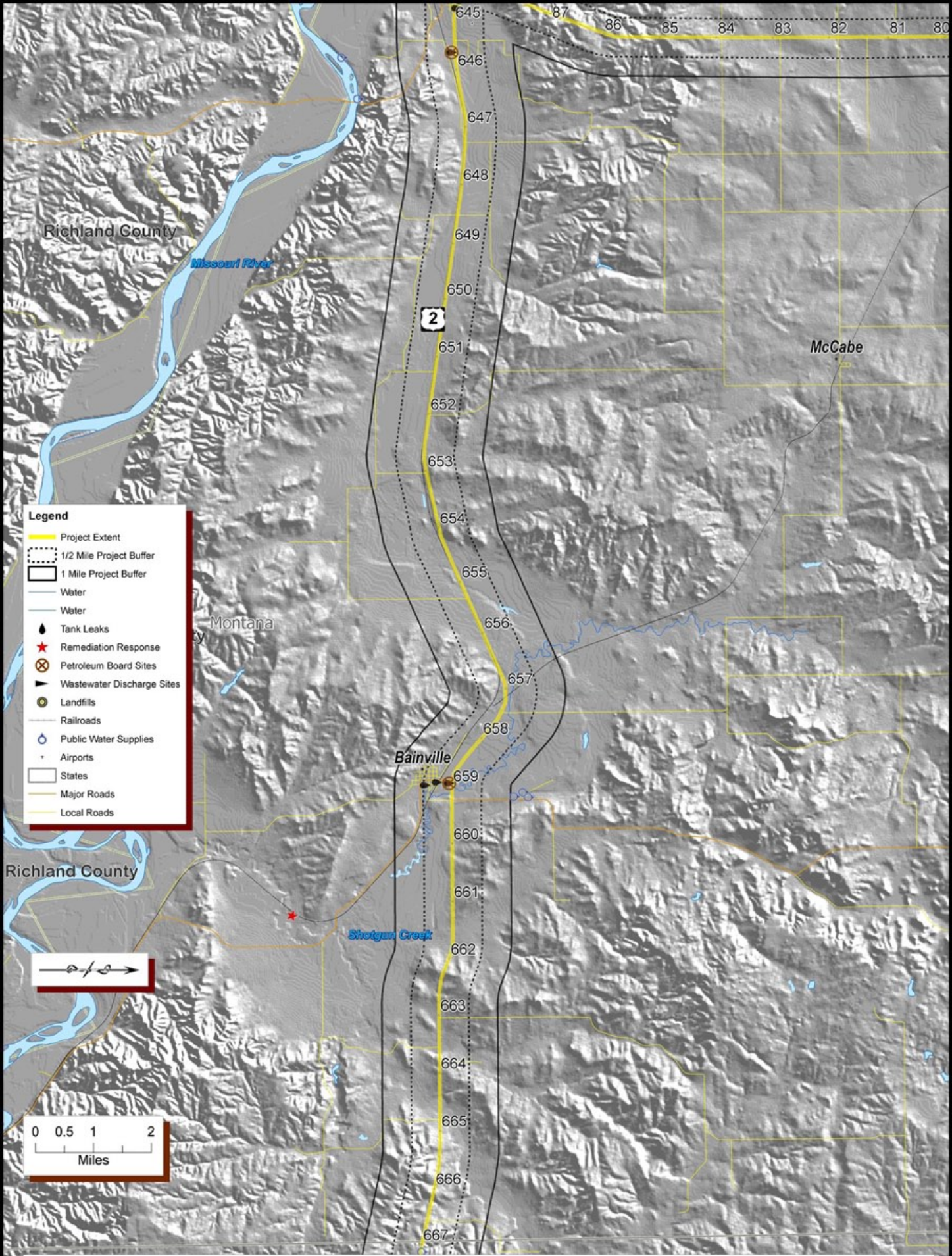

Figure 11:
Hazardous Waste Sites / North Dakota to Culbertson
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

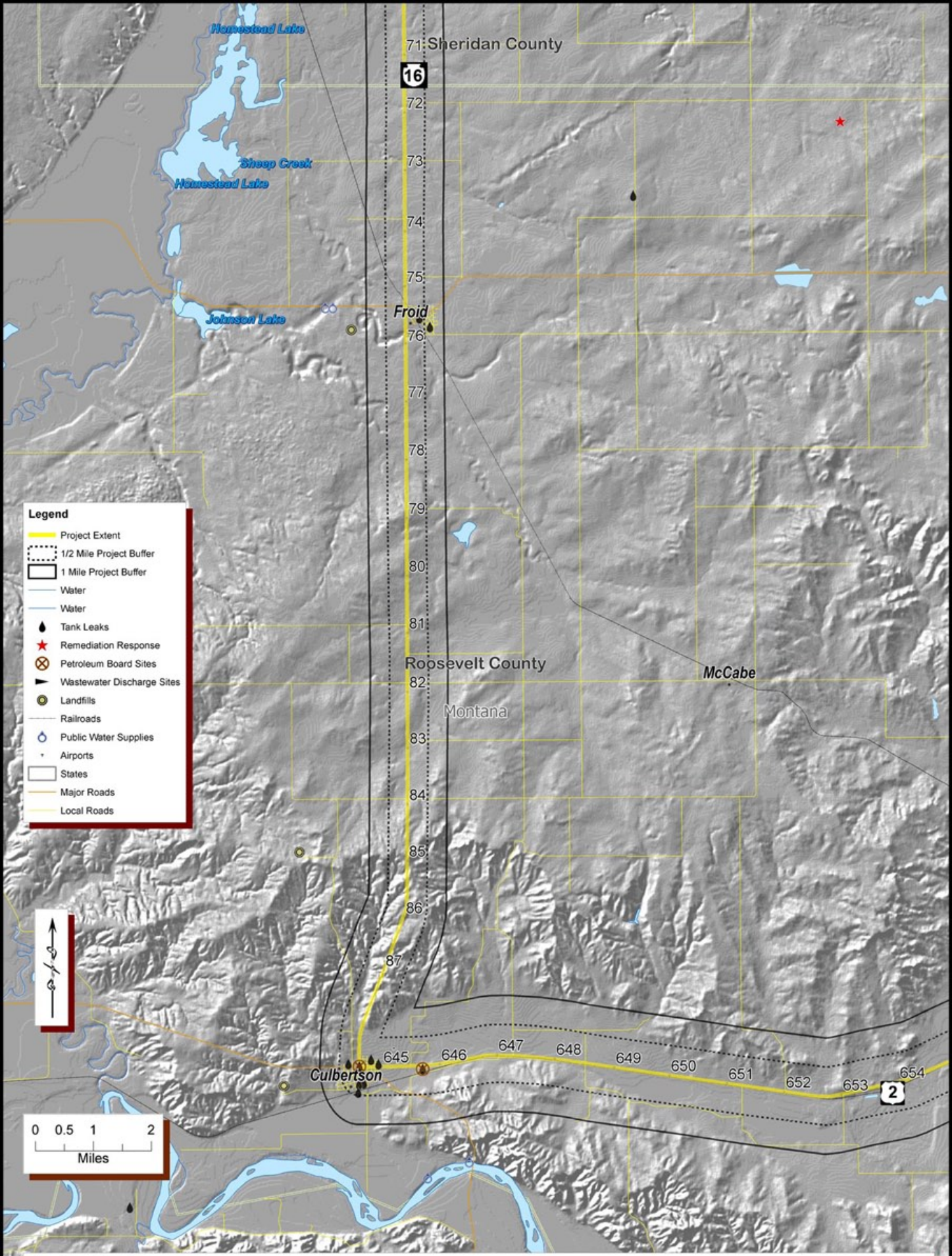

Figure 12:
Hazardous Waste Sites / Culbertson to MP 71
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

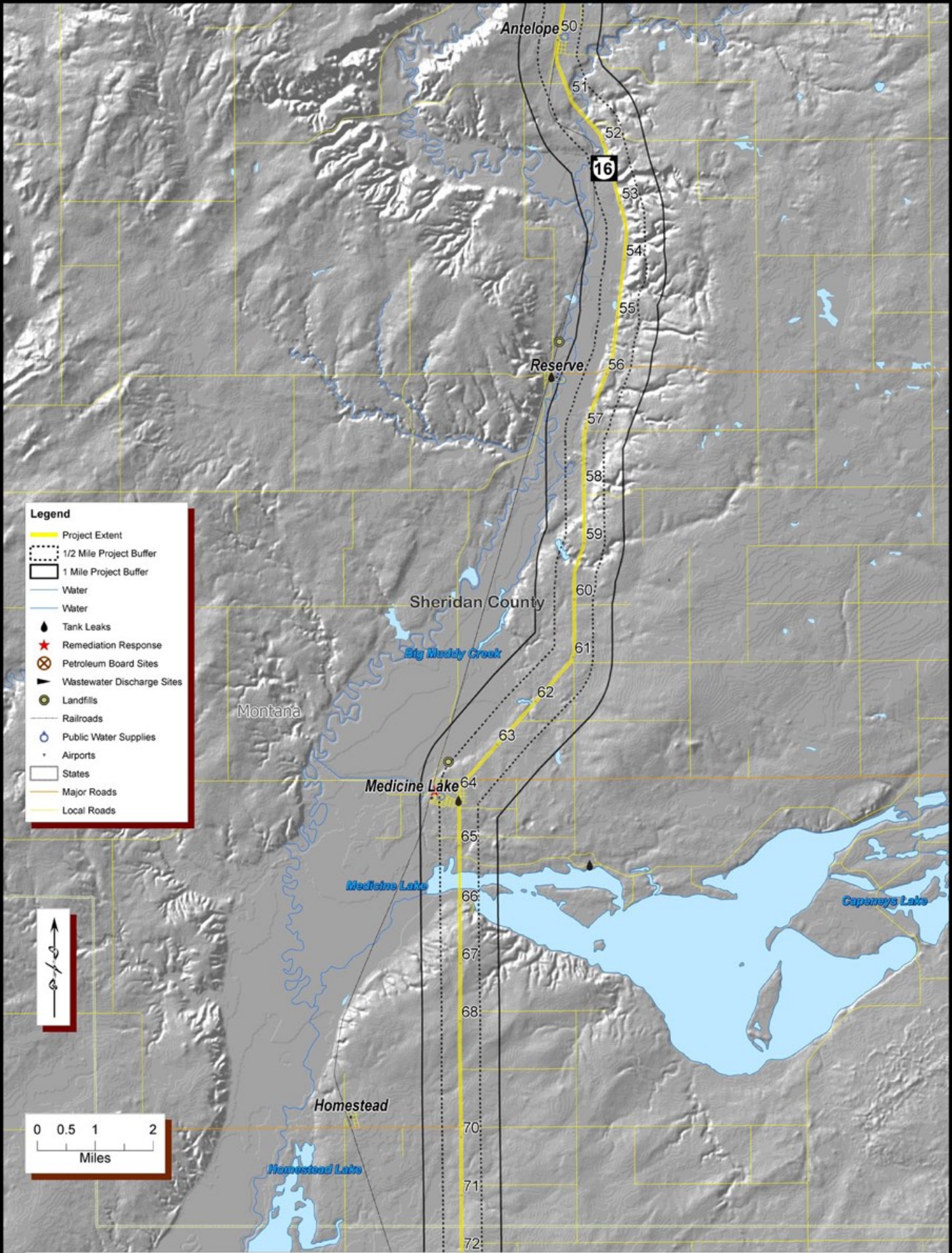

Figure 13:
Hazardous Waste Sites / MP 71 to Antelope
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

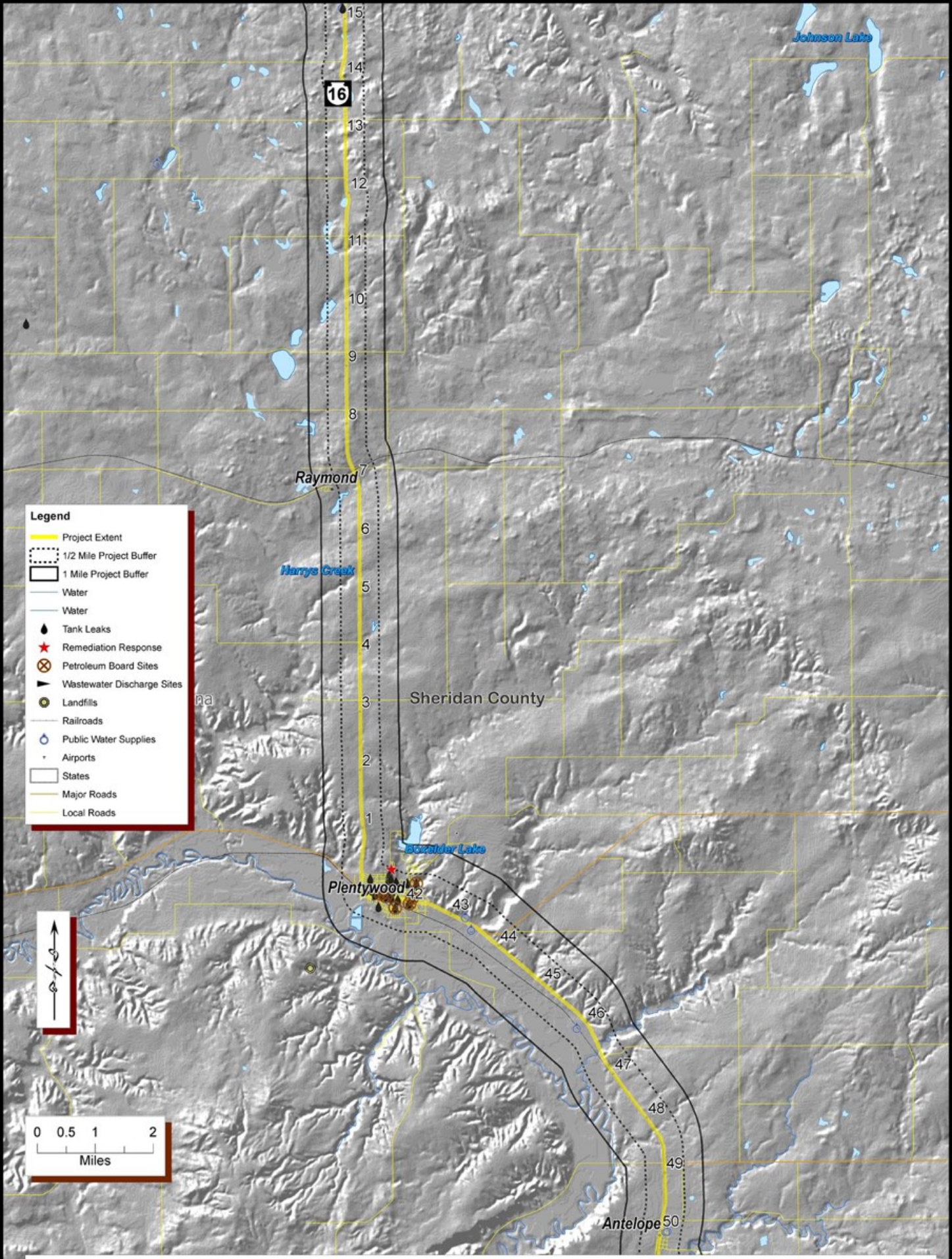

Figure 14:
Hazardous Waste Sites / Antelope to Canada
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

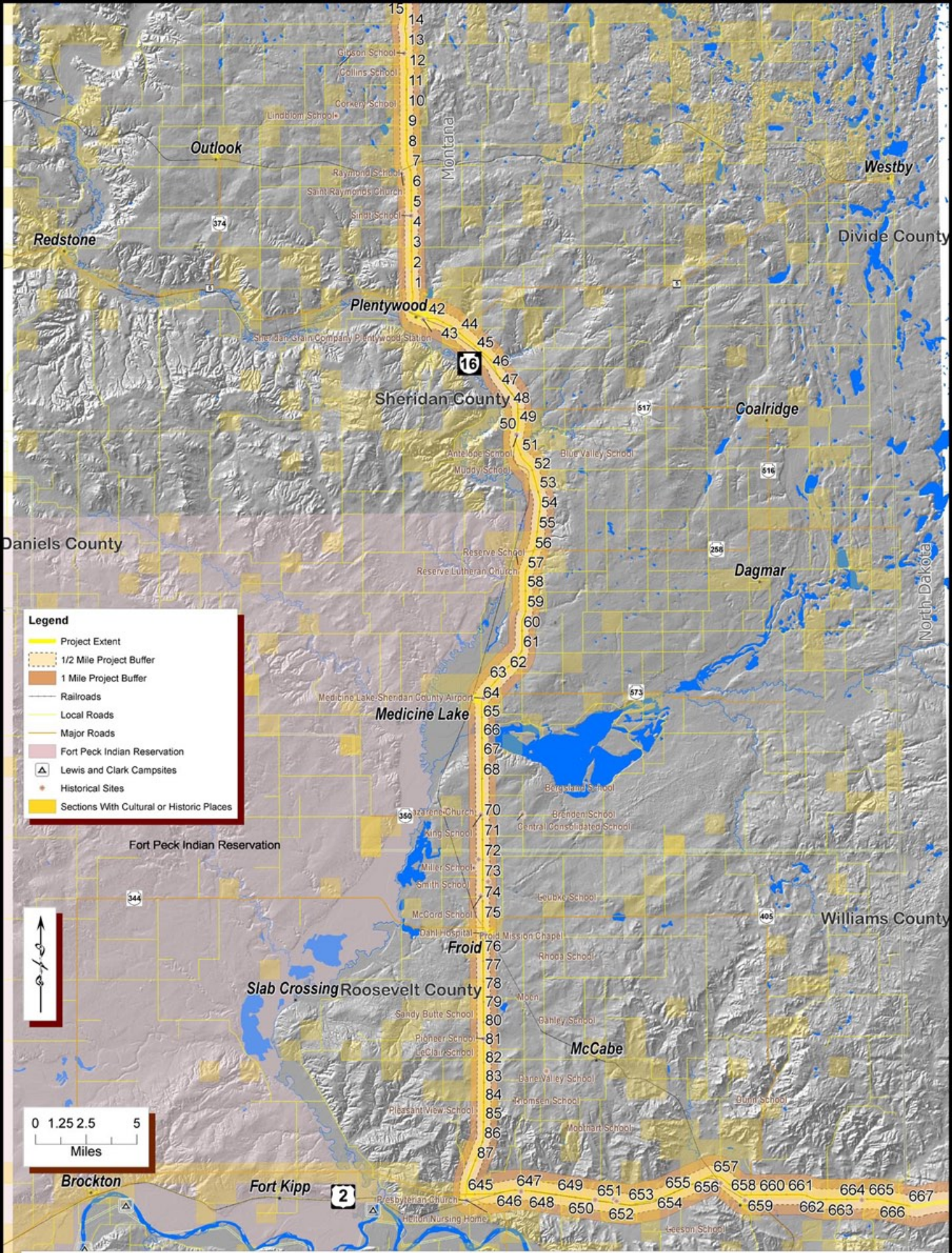

Figure 15:
Cultural Resources / Environmental Scan
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

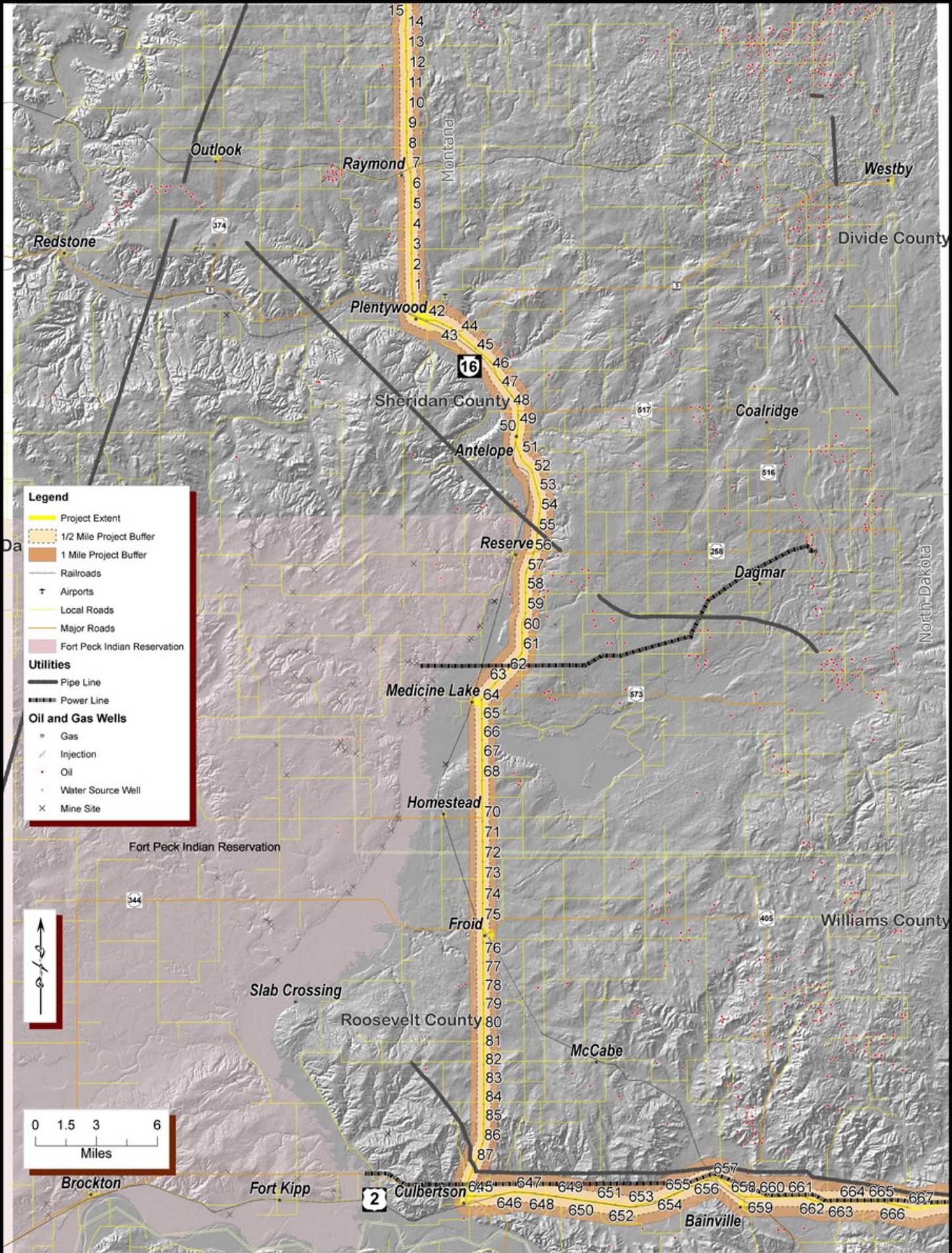

Figure 16:
Utilities / Environmental Scan
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

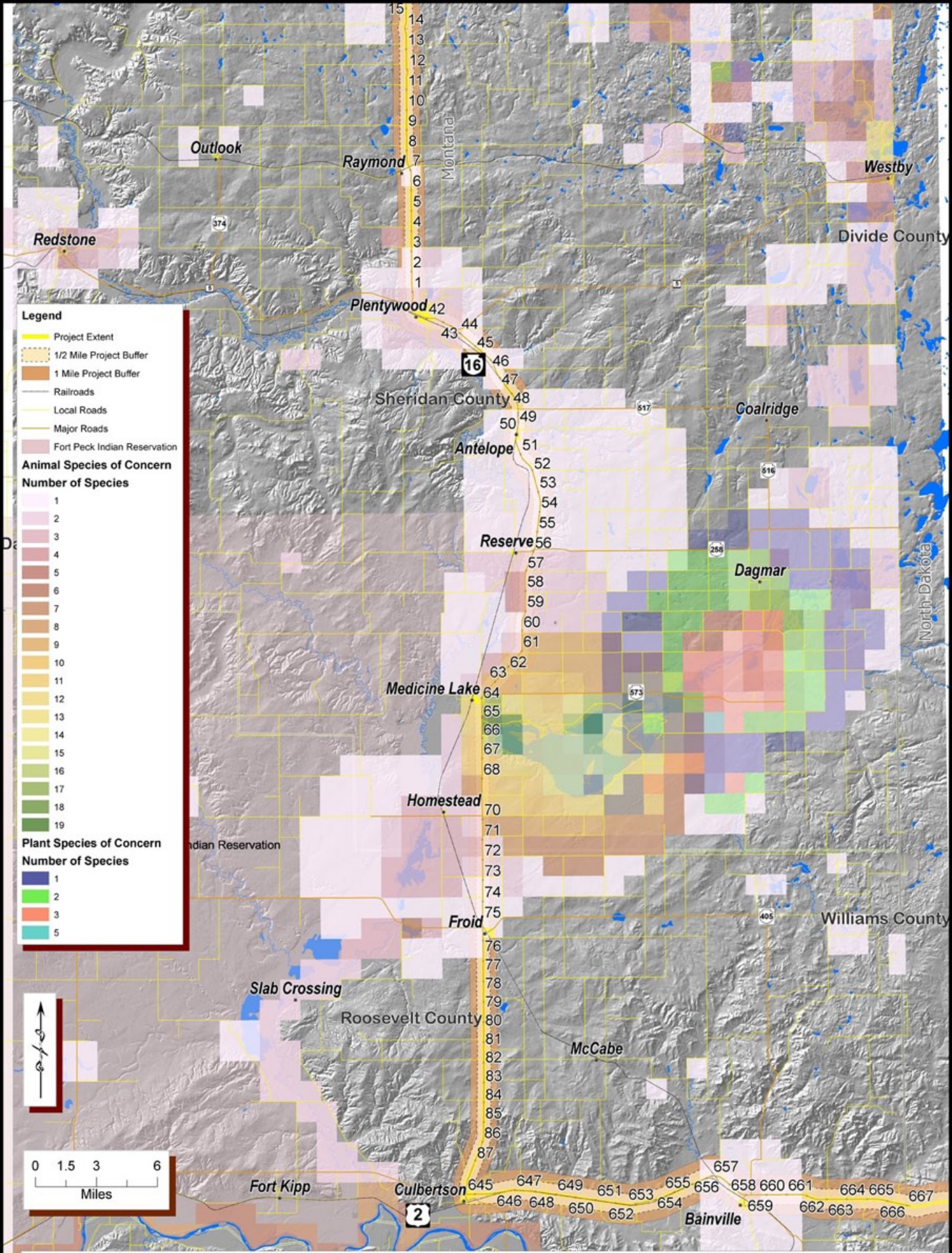

Figure 17:
Species of Concern / Environmental Scan
Transportation Regional Economic Development Study
Theodore Roosevelt Expressway

Appendix B: Photos

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 05
Date: 8/1/06
Location: MT 16
Approx MP: 84
Viewing Dir: N
Description: Block management area

Photo: 06
Date: 8/1/06
Location: MT 16
Approx MP: 84
Viewing Dir: N
Description: Viewing north along highway, from just north of MP 84

Photo: 07
Date: 8/1/06
Location: MT 16
Approx MP: 84
Viewing Dir: S
Description: Viewing south along highway, from just north of MP 84

Photo: 08
Date: 8/1/06
Location: MT 16
Approx MP: 82
Viewing Dir: E
Description: Historic farm on east side of highway

Photo: 09
Date: 8/1/06
Location: MT 16
Approx MP: 82
Viewing Dir: S
Description: Water at southwest corner of MT 16 and RD 2052

Photo: 10
Date: 8/1/06
Location: MT 16
Approx MP: 81
Viewing Dir: E
Description: Soil and Water Conservation District Research Farm

Photo: 11
Date: 8/1/06
Location: MT 16
Approx MP: 81
Viewing Dir: E
Description: Soil and Water Conservation District Research Farm

Photo: 12
Date: 8/1/06
Location: MT 16
Approx MP: 79
Viewing Dir: S
Description: Viewing south along highway, from MP 79

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 14
Date: 8/1/06
Location: MT 16
Approx MP: 78
Viewing Dir: W
Description: BOR sign

Photo: 16
Date: 8/1/06
Location: MT 16
Approx MP: 76
Viewing Dir: W
Description: Froid Cemetery

Photo: 17
Date: 8/1/06
Location: MT 16
Approx MP: 76
Viewing Dir: E
Description: Historic farm, RD 2046, south of Froid

Photo: 18
Date: 8/1/06
Location: MT 16
Approx MP: 76
Viewing Dir: S/SE
Description: Bridge near MP 76

Photo: 19
Date: 8/1/06
Location: MT 16
Approx MP: 76
Viewing Dir: S/SE
Description: Fjeseth Field, Froid

Photo: 20
Date: 8/1/06
Location: MT 16
Approx MP: 75.5
Viewing Dir: E
Description: Kvile Cemetery, north side of Froid

Photo: 21
Date: 8/1/06
Location: MT 16
Approx MP: 67.5
Viewing Dir: W
Description: Old barn

Photo: 22
Date: 8/1/06
Location: MT 16
Approx MP: 66
Viewing Dir: N
Description: Crossing at Medicine Lake Wildlife Refuge

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 23
Date: 8/1/06
Location: MT 16
Approx MP: 66
Viewing Dir: N/NE
Description: Medicine Lake Wildlife Refuge

Photo: 24
Date: 8/1/06
Location: MT 16
Approx MP: 66
Viewing Dir: N/NW
Description: Medicine Lake Wildlife Refuge

Photo: 25
Date: 8/1/06
Location: MT 16
Approx MP: 65.5
Viewing Dir: E
Description: Welcome sign at Refuge

Photo: 26
Date: 8/1/06
Location: MT 16
Approx MP: 65.5
Viewing Dir: S
Description: Refuge

Photo: 30
Date: 8/1/06
Location: MT 16
Approx MP: 64
Viewing Dir: W
Description: Herman Oil, Medicine Lake

Photo: 31
Date: 8/1/06
Location: MT 16
Approx MP: 62.5
Viewing Dir: W
Description: Farmstead, at intersection with Flandem Rd.

Photo: 32
Date: 8/1/06
Location: MT 16
Approx MP: 61.75
Viewing Dir: W
Description: Oil tanks and sludgy pond

Photo: 34
Date: 8/1/06
Location: MT 16
Approx MP: 62.5
Viewing Dir: E
Description: Flandrem – original site of Medicine Lake

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 35
Date: 8/1/06
Location: MT 16
Approx MP: 62.5
Viewing Dir: E
Description: Flandrem – original site of Medicine Lake

Photo: 37
Date: 8/1/06
Location: MT 16
Approx MP: 56
Viewing Dir: S
Description: Reserve Creek between MT 16 and Reserve, from bridge on MT 258

Photo: 40
Date: 8/1/06
Location: MT 16
Approx MP: 52
Viewing Dir: W
Description: Wetlands, south of MP 52

Photo: 42
Date: 8/1/06
Location: MT 16
Approx MP: 50
Viewing Dir: NE
Description: Northeast corner of Davis and Railroad, Antelope

Photo: 44
Date: 8/1/06
Location: MT 16
Approx MP: 50
Viewing Dir: E
Description: Along Davis Rd in Antelope

Photo: 46
Date: 8/1/06
Location: MT 16
Approx MP: 49
Viewing Dir: W
Description: Historic home

Photo: 47
Date: 8/1/06
Location: MT 16
Approx MP: 42
Viewing Dir: NW
Description: Northwest corner of MT 16 and Main, Plentywood

Photo: 48
Date: 8/1/06
Location: MT 16
Approx MP: 42
Viewing Dir: W
Description: Plentywood, viewing west toward Main

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 49
Date: 8/1/06
Location: MT 16
Approx MP: 42.5
Viewing Dir: N/NE
Description: Park at Mill in Plentywood – ownership unclear

Photo: 50
Date: 8/1/06
Location: MT 16
Approx MP: 42.5
Viewing Dir: E
Description: Viewing east along MT 16 from Mill Dr., Plentywood

Photo: 51
Date: 8/1/06
Location: MT 16
Approx MP: 42.5
Viewing Dir: W
Description: Creek crossing at Mill Dr (Boxelder Creek)

Photo: 52
Date: 8/1/06
Location: MT 16
Approx MP: 42
Viewing Dir: W
Description: Viewing west along MT 16 at Robert St, Plentywood

Photo: 53
Date: 8/1/06
Location: MT 16
Approx MP: 42
Viewing Dir: S
Description: Fueling station near Monroe St., Plentywood

Photo: 54
Date: 8/1/06
Location: MT 16
Approx MP: 1
Viewing Dir: W
Description: V-Trialer (corner of MT 5 and MT 16), Plentywood

Photo: 56
Date: 8/1/06
Location: MT 16
Approx MP: 3.5
Viewing Dir: N
Description: View of highway toward north

Photo: 58
Date: 8/1/06
Location: MT 16
Approx MP: 7
Viewing Dir: NW
Description: Raymond area

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 61
Date: 8/2/06
Location: US 2
Approx MP: 667
Viewing Dir: W
Description: State line along US 2

Photo: 62
Date: 8/2/06
Location: US 2
Approx MP: 663.5
Viewing Dir: N
Description: Farmstead

Photo: 63
Date: 8/2/06
Location: US 2
Approx MP: 662.75
Viewing Dir: N
Description: Farmstead

Photo: 64
Date: 8/2/06
Location: US 2
Approx MP: 661.25
Viewing Dir: N
Description: Fort Union historic marker sign

Photo: 65
Date: 8/2/06
Location: US 2
Approx MP: 659.75
Viewing Dir: W
Description: Landtech Corp #101 – tank farm – 3 in area

Photo: 67
Date: 8/2/06
Location: US 2
Approx MP: 656
Viewing Dir: W
Description: Railroad adjacent to highway, MP 656-646

Photo: 68
Date: 8/2/06
Location: US 2
Approx MP: 645.75
Viewing Dir: W
Description: View into Culbertson, Montola Growers on left

Photo: 69
Date: 8/2/06
Location: US 2
Approx MP: 645
Viewing Dir: W
Description: Culbertson

TRED Study - Environmental Scan Windshield Survey
Photo Log

Photo: 72
Date: 8/2/06
Location: US 2
Approx MP: 645
Viewing Dir: W
Description: Culbertson just east of MT 16 junction

Photo: 73
Date: 8/2/06
Location: US 2
Approx MP: 645
Viewing Dir: W
Description: Junction with MT 16, Culbertson

Photo: 74
Date: 8/2/06
Location: US 2
Approx MP: 645
Viewing Dir: N
Description: Park area at northwest corner of MT 16 and US 2, Culbertson

Appendix C:
Agency Correspondence

Montana Department of Transportation
Helena, Montana 59620

:emorandum

o: Dick Turner, Chief, Multimodal Planning
Hal Fossum, Economist Planner
Jean Riley, P.E., Chief, Environmental Services

:om: Steve Platt, Archaeologist
Environmental Services

ate: July 12, 2006

Subject: **TRED Study environmental review – Montana 16 and US 2**

This memo is written to provide some cultural resource input for the above planning project. I used 1:100,000 scale BLM topographic maps, the maps provided to me by Jean Riley, and my own archaeological experience in eastern Montana to compile the following information.

Montana has been inhabited by people since the end of the Pleistocene- the last large glacial episode on this continent. People have had about 11,000 years to leave archaeological remains across Montana. In that time, they have created a lot of sites. MDT can expect there to be dozens of archaeological sites within the proposed corridor, many of them significant to our understanding of local and regional prehistory.

I would expect to see stone circle sites (tipi ring sites) along the margins of the glacial potholes between Plentywood and the Canadian line. Between Plentywood and Medicine Lake Highway 16 follows the eastern side of the Big Muddy Valley where we are likely to find multiple stone circle sites and perhaps a bison kill or two along the valley wall, depending on its steepness. Where the road crosses perennial tributaries of Big Muddy we should expect to find several buried campsites. Buried campsites can be particularly important archaeologically because cultural materials are almost always better preserved in buried rather than surface contexts.

I expect less in the way of prehistoric archaeology from Medicine Lake to Culbertson, simply based on the flatter, drier, terrain. The exception to this is within the three or four miles of the corridor north of Culbertson. There may be both stone circle sites and/or bison kills north of Culbertson in the breaks leading down toward the Yellowstone.

From Culbertson east along Highway 2 the road follows Clover Creek and then crosses Shotgun Creek, Red Bank Creek, and then Little Muddy. Again we can expect to find buried campsites in the alluvial soils along the margins of these creeks.

In addition to archaeological resources we can expect to find historic homesteads and ranches within the proposed corridor, as well as historic buildings within the towns of Plentywood, Antelope, Medicine Lake, and Culbertson.

Assiniboine and Sioux members of the Fort Peck Indian Reservation will undoubtedly have an interest in some or all of the prehistoric sites I have discussed above. They likely continue to pursue a variety of traditional uses (plant gathering, hunting, religious practice, etc...) within the corridor as well. I am also certain that the Fort Peck Tribes will have a vested interest in Montana 16 and Highway 2 expansion from an economic perspective.

Should MDT decide to pursue expansion of the Montana 16 and US 2 facilities MDT will need to proceed with a full blown cultural resource inventory, archaeological testing, and requisite consultation with the Fort Peck Tribes.

Cc: Bonnie Steg, Supervisor, Resources & Permitting

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
BILLINGS REGULATORY OFFICE
2602 FIRST AVENUE NORTH, ROOM 309
BILLINGS MT 59101

Please reply to attention of:

June 26, 2006

Billings Regulatory Office
Phone (406) 657-5910
Fax (406) 657-5911

RE: TRED Study
Corps File No. 200690476

Montana Department of Transportation
Attention: Ms. Jean Riley
Post Office Box 201001
Helena, Montana 59620-1001

Dear Ms. Riley:

Reference is made to your letter regarding the TRED Study for Sheridan and Richland Counties, Montana.

Under the authority of Section 404 of the Clean Water Act, Department of the Army permits are required for the discharge of fill material into waters of the United States. Waters of the United States include the area below the ordinary high water mark of stream channels and lakes or ponds connected to the tributary system, and wetlands adjacent to these waters.

Based on the information provided, the project area may contain jurisdictional waters of the U.S., which may trigger permitting requirements. It is impossible to advise you on likely permitting scenarios without detailed information pertaining to the project corridor and the scope of project impacts.

When final design has been completed, please submit plans and a joint application to this office, along with project drawings and photographs of the proposed sites. Please also include an inventory of aquatic resources, including wetlands that may be affected by this project. The application can be downloaded from http://www.nwo.usace.army.mil/html/od-rmt/applications.html, or one can be mailed to you upon request. When the application is complete, a determination will be made as to whether or not authorization will be granted.

If you have any questions, please call me at the Billings office at (406) 657-5910, and reference File No. 200690476.

Sincerely,

Shannon Johnson

Shannon Johnson
Project Manager

Montana Fish, Wildlife & Parks

June 22, 2006

1420 E. Sixth Avenue
P.O. Box 200701
Helena, Montana 59620-0701

Jean Riley
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, Montana 59620-1001

TRED Study
Theodore Roosevelt Expressway
Montana 16-Canada Border to Culbertson
& Culbertson to ND Border

Dear Jean:

The Montana Department of Fish, Wildlife & Parks has reviewed the information submitted regarding your study efforts along the identified corridor. Thank you for the opportunity to provide comments.

Development along rivers and streams can adversely affect or destroy the waterway or adjacent riparian areas. Current development practices can and are causing excessive and unnecessary damage to the banks, beds, and protective vegetation of the state's streams and rivers. The state has a duty to protect the integrity of its rivers and streams on behalf of all its citizens, and it is imperative that Best Management Practices be incorporated into construction plans and projects be designed to maintain and safeguard our natural aquatic and riparian habitats. To that end, the following recommendations are offered to protect these important areas.

a. Development plans should first incorporate a design that avoids direct adverse impacts to these resources. If conditions are such that direct adverse impacts cannot be avoided, project features should be designed to minimize impacts. Unavoidable adverse impacts should be mitigated.
b. Ephemeral, intermittent and perennial stream systems cross the study corridor. All efforts should be taken during pre-design through construction phases to assure uninterrupted passage of a stream's discharges to maintain the natural channel pattern, dimension and profile and temporal characteristics. These stream systems are readily observable on the maps and aerial photos provided or by a site visit.
c. Riparian areas adjacent to these drainages should also be protected to the maximum extent practicable. If such areas cannot be avoided or will be notably be degraded in scope or quality, they should be mitigated on site and in kind. This may require MDT to develop procedures that allow the re-establishment of stream systems and riparian areas outside of existing rights-of-way.

d. If crossings are necessary, bridges are preferred over culverts as bridges usually result in less adverse impact to a stream's features, functions, dynamic processes and its adjacent riparian habitat less than a culvert at the same location. Installation of culverts may or may not require site-specific mitigation. In general, culverts should be embedded and lengths minimized where feasible.
e. If not already done so, the USFWS should be notified regarding any concerns related to Medicine Lake National Wildlife Refuge.

Thank you for the opportunity to provide comments and please contact me if you have any questions.

Sincerely,

doug mcdonald

Doug McDonald
Stream Protection Coordinator
Habitat Protection Bureau/Fisheries

Copy: FWP Region 6 – Bill Wiedenheft
DEQ – Jeff Ryan
COE – Allan Steinle

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th Street, Suite 3200
HELENA, MONTANA 59626

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Ref: 8MO

July 7, 2006

Post-it® Fax Note 7671	Date 7-7-06	# of pages ▶ 20
To Don Galligan	From Hal Fossum	
Co./Dept. HDR	Co. MDT	
Phone #	Phone # 406-444-6116	
Fax # 208-387-7100	Fax #	

Mr. Dick Turner, Chief, Multi-Modal Planning
Montana Dept. of Transportation
2701 Prospect Ave., P.O. Box 201001
Helena, MT 59620-1001

Re: EPA Comments on TRED Study Scan

Dear Mr. Turner:

The Environmental Protection Agency (EPA) Region VIII Montana Office was not able to attend the June 23, 2006 TRED Corridor Study environmental review session, however, we have received information on the TRED Study including a set of maps showing the proposed study area along Montana Highway 16 from the Canada border to the Port of Raymond to the intersection with US Highway 2 at Culbertson; and from that intersection east along US 2 to the North Dakota state line, and want to offer input in response to your request.

We have not reviewed the proposed TRED Study area in the field, and cannot at this time provide much site-specific guidance regarding environmental issues in the area, but we want to draw your attention to a document that we drafted entitled, *"Guidance/Measures to Reduce Environmental Impacts of Highway Projects"* (see copy attached). This document was drafted in association with interagency discussions for development of an improved ecosystem approach for transportation project development. It is intended to identify general environmental issues and concerns with highway projects, as well as potential mitigation measures to minimize and reduce impacts. Ms. Jean Riley, of the Montana Dept. of Transportation Environmental Services Bureau, has reviewed and offered input on this draft document. This document may be of interest and helpful in identifying environmental issues as you proceed with this TRED Corridor Study.

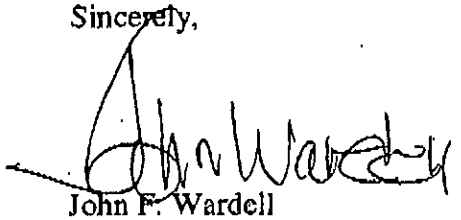
One of the more significant environmental issues is likely to be potential impacts to aquatic areas, including wetlands, particularly if widening of the existing roadway to four lanes is proposed. As noted in our draft *Guidance,* Clean Water Act Section 404 Dredge and Fill Permit rules and policies require that adverse impacts to aquatic resources be avoided and minimized, and only the least environmentally damaging alternative to aquatic resources may be permitted, so long as that alternative does not have significant adverse environmental consequences (40 CFR 230.10a).

It will be important, therefore, for proposed highway improvements along Montana Highway 16 and US Highway 2 to avoid and minimize adverse impacts to aquatic resources. There may be potential concerns about development of a four lane highway in the proposed study area if aquatic areas would be adversely affected by highway expansion, and adverse effects were not justified by the project purpose and need. It is important that existing and future traffic volumes demonstrate a need for a four-lane highway to justify potential adverse impacts, and allow a Section 404 Dredge and Fill permit to be issued in conformance with regulatory requirements.

We note that when an EIS was prepared to evaluate alternative highway improvements along US Highway 2 east of Havre, Montana in 2004, it was found that the two-lane highway alternatives fulfilled the project purpose and need with fewer adverse environmental impacts than the four-lane alternatives. In addition, the two-lane alternatives were substantially less costly, and an economic analysis referenced in that EIS reported that capacity improvements to U.S. 2 were unlikely to induce development, and none of the alternatives would create substantial growth in the economy of the area. The four-lane alternatives, therefore, offered no improvement to the regions economy and potential for future growth over the improved two-lane alternatives, and would cost substantially more with greater environmental effects. These results may offer implications and guidance relevant to the proposed TRED Corridor Study.

If you have any questions or if we may provide further information regarding this project plese contact Mr. Steve Potts of my staff in Helena at (406) 457-5022 or in Missoula at (406) 329-3313 or via e-mail at potts.stephen@epa.gov . Thank you for your consideration.

Sincerely,



John F. Wardell
Director
Montana Office

Enclosure

cc: Larry Svoboda/Julia Johnson, EPA, 8EPA-N, Denver
Allan Steinle/Todd Tillinger, COE, Helena
Jean Riley, MDOT, Environmental Services Bureau

DRAFT

Guidance/Measures to Reduce Environmental Impacts of Highway Projects

Water Quality/Aquatics

-Roadway siting, construction, operation, and maintenance can impact streams, wetlands and riparian areas due to stream/riparian/floodplain encroachment, runoff, disruption of drainage patterns, stockpiling of materials in staging areas, maintenance of construction and maintenance equipment, and snow plowing and sanding of roads or use of salt and deicers. Road projects should be planned, designed, constructed and maintained to avoid or have minimal long-term water quality impacts. Water quality protection measures should be identified in the NEPA document.

Sediment & Erosion Control

-It is important to reduce and control erosion and sediment transport during construction, and to plan and design highways to minimize pollutant loading from highway runoff through use of appropriate BMPs. Highway projects are regulated through MPDES/NPDES Permits to authorize discharge of pollutants through stormwater runoff. Such permits include the requirement to prepare a Storm Water Pollution Prevention Plan (SWPPP), which identifies BMPs for erosion control and management of stormwater runoff, and include a provision that no unnecessary operation of equipment occur within the channels of creeks and rivers to mitigate water quality impacts.
http://www.deq.state.mt.us/wqinfo/MPDES/swPermits/2002ConstGenPermit/FinalConstPermit02.pdf#xml=http://search2.discoveringmontana.com/cgi-bin/texis.cgi/webinator/search/xml.txt?query=BMPs+for+highway+construction&pr=DEQ&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&sufs=0&order=r&cq=&id=43574f6d1

Stream/Riparian/Floodplain Encroachment

-Highway planning and design should avoid/minimize highway encroachment upon, or disturbance to natural stream hydrology, stream banks and channels, riparian areas, wetlands, and floodplains. Natural stream characteristics and hydrology should be maintained and preserved, and the natural and beneficial effects of riparian areas and floodplains should be restored and/or protected.

-Stream channel modifications should be avoided. If there is absolutely no way to avoid impacts to the stream channel, channel changes should be planned and designed to

simulate natural stream channel dimensions and length, while incorporating natural aquatic habitat features (riffle, pool, run) as much as possible. It is preferable to restore channel length and natural riffle/pool sequences without installation of artificial grade control structures, although if channel length cannot be restored, grade control structures may be necessary to maintain channel stability. Aquatic biologists and staff with training and knowledge of fluvial geomorphology be consulted during design of stream channel modifications, with appropriate permits and authorizations obtained (404 permits, 401 certification, 310 or 124 permits, short-term turbidity exemptions, tribal permits, etc.,).

Stream Crossings (Bridges and Culverts)

-Replace or widen existing bridges wherever possible; incorporate wildlife crossing features for passage underneath the roadway while minimizing impacts on streams and wetlands; design culverts to accommodate flood flows and enhance fish passage; replacing culverts with bridges where possible; adding culverts to improve hydrologic connections and reduce potential for flooding; and removing and restoring existing roadways where a new roadway corridor is created.

-Assure that the bridge and culvert designs accommodate flood flows with no substantial changes to flood elevations. Bridges should have adequate size, configuration and span to reduce floodplain encroachment (e.g., construction of bridges on pilings, as opposed to fill, can reduce encroachment), and should match hydraulic traits of the natural stream, while minimizing disturbance to stream hydrology, banks and channel, and encroachment upon the river channel, riparian area, and floodplain. Stream crossings should be able to pass flood flows and bedload, maintaining the integrity and continuity of the floodplain as well as the actual channel to avoid impeding flood flows that could cause sediment deposition above stream crossings and erosion and scouring below crossings. Culverts should simulate the natural stream grade and stream bed substrate as much as possible (open bottom arch culverts to provide a natural streambed preferred), and have sufficient width and capacity to pass flood flows and bedload transport with minimal encroachment upon the river channel and riparian area. Bridges with wide spans also afford opportunities for wildlife passage, and reduce wildlife-vehicle collisions.

- Stream crossings should provide for fish passage, http://www.hsus.org/wildlife/issues_facing_wildlife/wildlife_crossings_wild_animals_and_roads/

-Stream crossing construction work should be conducted during periods of low stream flow to avoid spawning and incubation periods for important fish, and should avoid and/or minimize impacts on the stream channel during construction. Special care should be taken to avoid or minimize impacts to riparian vegetation and avoid riparian degradation and siltation of the creek as much as possible during construction, with restoration and revegetation of disturbed stream banks and riparian areas following construction.

Road Maintenance

-Maintenance activities such as application of herbicides, mowing, and winter maintenance such as snowplowing and application of sand, salt, and chemical deicers have the potential to introduce sediment, materials and chemicals either directly or indirectly to a stream and associated riparian and wetland resources. Maintenance operations should be conducted in a manner that minimizes adverse impacts to streams and wetlands. Practices of expediently sidecasting material over the shoulder, filling depressions and widening shoulders can have adverse effects upon streams, wetlands, and riparian areas, and are inappropriate. Snow plowing and subsequent to sanding moves sand off the roadbed to the adjacent ditch line and fill slopes, filling depressions and ditches and widening shoulders, which can have adverse effects upon streams, wetlands, and riparian areas. Impacts of winter maintenance activities are more a matter of a long term indirect and cumulative effects than any one incident.

-BMPs for maintenance operations should be used such as using mechanical brooms to pick up sand; using sediment traps, straw bales, silt fences, and vegetative filters near streams and wetlands to capture sediment before it can enter streams and wetlands; reuse of sanding material; etc,.

-Training available for road maintenance crews regarding conduct of road maintenance in a manner that protects streams and wetlands (contact, Montana Local/Tribal Technical Assistance Program at Montana State University, Steven J. Jenkins, P.E, at 406-994-6100 or 1-800-541-6671).

-When winter highway maintenance activities potentially affect streams and wetlands the effects of the maintenance program should be disclosed in the NEPA document, including measures to mitigate effects on waters of the United States (mitigation means avoid and minimize adverse effects, and compensation for unavoidable effects).

303(d) Listed Waters & TMDLs

-Highway improvements should not further degrade water quality impaired waters listed by the Montana DEQ under Section 303(d) of the Clean Water Act, and should be consistent with Total Maximum Daily Loads (TMDLs) and Water Quality Restoration Plans (WQRPs) prepared to restore beneficial use support for impaired waters. If additional pollutant loading is predicted to occur to a 303(d) listed stream as a result of a highway project, the project should include measures to control existing sources of pollution to offset pollutant addition from road construction, so that no worsening of water quality occurs.
-MDT/FHWA should contact the Montana Department of Environmental Quality to ensure MDEQ concurrence on, and coordination of proposed activities with the MDEQ's TMDL development for impaired 303(d) listed water bodies. MDT/FHWA should work

with the MDEQ as it develops Total Maximum Daily Loads (TMDLs) and associated water quality restoration plans for 303(d) listed streams in the project area to seek opportunities for water quality restoration (e.g., contact Robert Ray at 444-5319, Jeff Ryan at 444-4626, Mark Kelley at 444-3508). On Tribal lands, contact the Tribe's environmental office to identify impaired water bodies and any applicable TMDL/Water Quality Restoration Plans (e.g., on Flathead Reservation contact Paula Webster at 406-883-2888).

-Where appropriate consider conduct of watershed or aquatic habitat restoration activities to compensate for past impacts of highways to aquatic resources, particularly in watersheds with 303(d) listed waters where highways may have contributed to aquatic impairments through past channelization, riverine or floodplain encroachments, sediment delivery during construction, continuing maintenance activities, and other activities that may have affected channel stability, water quality, aquatic habitat, and designated waterbody uses.

Impacts to Waters of the U.S., including Wetlands, and Clean Water Act Section 404 Permits

-Project planning and design should avoid and minimize impacts to waters of the U.S., including wetlands, as much as possible, and the NEPA document should discuss planning and design measures to avoid and minimize impacts to wetlands (i.e., include draft 404(b)(1) analysis in the NEPA document). Clean Water Act Section 404 Dredge and Fill Permit rules and policies for placement of fill material in waters of the U.S., including wetlands, should be followed. These rules require that adverse impacts to aquatic resources be avoided and minimized as much as possible, and that only the least damaging practicable alternative to aquatic resources be permitted, so long as that alternative does not have other significant adverse environmental consequences (40 CFR 230.10(a)).

-Project purpose and need should be concurred upon by the Corps of Engineers and other agencies involved in the 404 regulatory process. Highway project purpose and need should be demonstrated from a traffic and volume standpoint to avoid unnecessary impacts to aquatic resources.

-Identify impacts to wetlands with acreages and impacts to wetlands functions, including direct and indirect impacts (i.e., unavoidable impacts from road construction, including gravel mining or excavation of borrow material, stockpiling of materials in staging areas and disposal of waste materials; reasonably foreseeable impacts from induced growth; etc,). MDT should oversee the construction contractor to assure that environmentally sensitive areas are avoided when obtaining material sources and during excavation/fill operations. Unavoidable impacts to wetlands or other aquatic areas during project construction (from material source sites or other reasons) need to be authorized through 404 permits.

-Plan wetland mitigation to compensate for unavoidable wetland losses. The goal of wetland mitigation should be to replace the functions of lost wetlands in areas adjacent to or as close as possible to the area of wetlands loss. EPA/Corps policy has accepted acre-for-acre replacement of wetlands as a surrogate for replacement of functions when there is a lack of definitive information on functions, although adjustments may be necessary to reflect the expected degree of success of mitigation, and provide an adequate margin of safety (i.e., greater than acre-for-acre replacement is suggested when impacted wetlands have high function and likelihood of replacement is low). Mitigation should look at on-site compensation first, then off-site; in-kind then out-of-kind.

-Prepare detailed Wetland Mitigation Plan providing for adequate replacement of lost wetland functions when a final preferred alternative is identified. This Plan should be approved by the appropriate agencies before implementation of the proposed project. If land acquisition for wetland mitigation is needed, we encourage negotiations for such acquisition concurrent with negotiations for acquisition of acquisition of road right of ways. The Wetland Mitigation Plan should contain a statement of goals, a monitoring plan, long-term management/protection objectives and a commitment to conduct additional work, if required, to meet the goals of the Plan. A summary or outline of the Wetland Mitigation Plan should be included in the FEIS (as an appendix), and we encourage consultation with the Montana Interagency Highway Wetlands Group for wetland mitigation efforts to facilitate interagency agreement on the proposed mitigation plan for replacement of wetland functions. We note that excavation of borrow material to meet construction needs may provide an opportunity for wetland mitigation (i.e., wetland creation).

-The Army Corps of Engineers, U.S. Fish & Wildlife Service, EPA, Montana Dept. of Fish, Wildlife and Parks and Montana Dept. of Environmental Quality and appropriate Tribal authorities should all be contacted to assure that proper authorizations and permits are obtained prior to construction (e.g., 404 permits, 310 or 124 permits, short term turbidity exemptions, tribal permits, etc.,). We suggest contacting Todd Tillinger of the Corps of Engineers in Helena at 406-441-1375; Jeff Ryan of the MDEQ at 406-444-4626; and Scott Jackson of the USFWS in Helena at 406-449-5225, and Toney Ott of EPA at 303-312-6909. Many Tribes have local ordinances designed to protect water quality (e.g., Aquatic Lands Conservation and Shoreline Protection Ordinances and on the Flathead Reservation, http://www.cskt.org/tr/nrd.htm). Tribal governments should be contacted to obtain necessary Tribal permits (on the Flathead Reservation call the Natural Resources Department at 406-883-2888).

Wildlife

-The quality and capacity of wildlife habitat, known wildlife corridors/trails, and usage by wildlife near proposed highway projects should be evaluated. Direct and indirect (e.g., induced growth, noise, etc.,) effects of new highway alignments or widening of existing roads upon wildlife should be evaluated (including increased mortality from higher traffic levels, loss of habitat, reduced access to available habitat, blockage of

migration and travel corridors, effects on biodiversity). Existing wildlife mortality and wildlife-vehicle accident history should be evaluated to show where there is a need to develop additional road improvements to deter wildlife crossing and/or decrease wildlife-vehicle collisions, and focus the location of additional design measures to reduce risks of animal-vehicle collisions. Wider highways, particularly a divided four-lane highway, will have a wider crossing distance for terrestrial wildlife to contend with, and will likely be a greater barrier to species movement across the highway, increasing wildlife fragmentation and reducing wildlife connectivity. Such effects should be minimized, and unavoidable effects to wildlife mitigated as much as possible.

-Mitigation measures should be incorporated into the project to reduce impacts to wildlife habitat, and connectivity/fragmentation impacts, and risks of vehicle-wild animal crashes. Estimated reductions in impacts to wildlife from proposed mitigation should be disclosed. Increased sight distance with clear zone improvements help drivers avoid crossing wildlife and may decrease animal related accidents. Wildlife is often attracted to and follow drainages, so bridge structures for wildlife passage should be considered in areas where there is high wildlife use and history of animal-vehicle collisions. The mitigation sections should include analysis of the extent to which stream crossings can be modified to also serve as wildlife crossings to reduce wildlife mortality, connect habitat areas, and reduce traffic accidents (assuming stream crossings coincide with areas where there is wildlife movement or an opportunity to reduce mortality rates). Use replacement or modification of existing or proposed bridges as opportunities to include design provisions to facilitate safer wildlife crossing and reduce wildlife-vehicle accidents (e.g., assuring that bridges are wide enough to span upland area as well as wetted areas to enable movement for terrestrial wildlife species). Crossings should be of sufficient width, contain minimal dark passages, and consider use of wing guide fencing in appropriate locations to help direct wildlife to safer crossings of the highway. Information regarding wildlife and highway conflicts and mitigation may be available on websites, for example: http://www.fhwa.dot.gov/environment/wildlifecrossings/overview.htm ; www.berrymaninstitute.org ; http://www.hsus.org/wildlife/issues_facing_wildlife/wildlife_crossings_wild_animals_and_roads/ ;

Threatened and Endangered Species

- If the proposed activities could affect threatened or endangered species (e.g., bull trout, grizzly bear, bald eagle, lynx, gray wolf, etc,), the NEPA document should include the Biological Assessment and the associated U.S. Fish and Wildlife Service (FWS) Biological Opinion or formal concurrence for the following reasons:

(1) NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made;
(2) The CEQ Regulations for Implementing the Procedural Provisions of NEPA strongly encourage the integration of NEPA requirements with other

environmental review and consultation requirements so that all such procedures run concurrently rather than consecutively (40 CFR 1500.2(c) and 1502.25); and

(3) The Endangered Species Act (ESA) consultation process can result in the identification of reasonable and prudent alternatives to preclude jeopardy, and mandated reasonable and prudent measures to reduce incidental take. These can affect project implementation.

-Both the Biological Assessment and the EIS must disclose and evaluate the potential impacts of the proposed action on listed species. They can jointly assist in analyzing the effectiveness of alternatives and mitigation measures. The full disclosure mandate of NEPA suggests that consultation be instigated as soon as possible. Thus, the final EIS and Record of Decision should not be completed prior to the completion of ESA consultation. Treating the consultation process as a separate parallel process that is not closely involved with the NEPA process represents a risk because during the consultation, FWS could identify additional impacts, new mitigation measures, or changes to the preferred alternative. If these changes have not been evaluated in the final EIS, a supplement to the EIS could be warranted.

Biodiversity

-Biodiversity may be a critical consideration for new projects, major construction or when special habitats (i.e., wetlands, springs, fens, threatened and endangered species habitat) will be affected. The state of the art for this issue is changing rapidly. CEQ prepared guidance entitled, "Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act," http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-9.pdf

Indirect Effects/Quality of Life/Smart Growth

-CEQ's regulations for implementing NEPA state that an EIS should include disclosure of: "Indirect effects and their significance (40 CFR 1502.16(b))." Indirect effects are defined as "...caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include **growth-inducing effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.**" (40 CFR 1508.9(b))

--New highway construction that improves traffic flow and eliminates congestion can increase access and contribute to induced residential, commercial, industrial growth, and changed land uses. Increased rates of growth and land use changes caused by a highway project, constitute indirect effects that should be evaluated. Induced residential, commercial, and industrial growth and land use change affect air quality, water quality, wetlands, wildlife habitat loss and fragmentation, urban sprawl, loss of rural character, farm land, ecosystems, and other natural resources. Road building and expansion often

result in induced growth effects (sprawl), and stimulate increased use of privately owned vehicles and vehicle miles traveled. This, in turn, leads to increased auto dependency and demand for more roads. These types of indirect effects and appropriate mitigation measures need to evaluated and disclosed in the EIS (i.e., identify existing condition and trends and forces shaping growth and development in the area; identify land with development potential and most likely locations of growth; identify sensitive environmental resources that may be impacted; estimate growth and impacts with and without project).

-CEQ regulations also state that an EIS should include the "means to mitigate adverse environmental effects." (40 CFR 1502.16(h)) This provision applies to indirect effects as well as direct effects. Since the CEQ regulations require an analysis of indirect effects, the best time to identify such effects is prior to impacts, when there is better opportunity to avoid, minimize or mitigate for them. Much of the mitigation for indirect effects is subject to regulation by the city/county in which the highway will be constructed. If analysis of indirect induced growth effects occurs before the highway project is completed, the city/county will be in a better position to effectively plan for future growth and develop mitigation measures for the impacts resulting from induced growth. The EIS should serve the function of offering the city/county adequate notice of the foreseeable environmental consequences, thus providing the opportunity to plan and implement corrective measures, if needed, in a timely manner.

-The EIS can identify potential mitigation techniques for induced growth and associated environmental effects, such as:

-access controls (location of interchanges)
-context sensitive designs
-local land use plans that affect or regulate new development
-zoning controls
-transfer of development rights
-growth management regulation (public facilities ordinances, development moratoria, urban growth boundaries, extraterritorial zoning/annexation)
-resource management and preservation regulations
-land acquisition and conservation easements
-incentives for Brownfields/infill development
-development fees and exactions.
-Analysis of indirect effects should not rely solely on compliance with existing comprehensive land use plans. While comprehensive land use plans are an important component of the analysis of indirect effects, compliance with these plans could still result in adverse environmental effects.

Smart Growth

Encourage planners and decision makers to consider effects of infrastructure

development, including transportation improvements, on growth patterns, and to plan and coordinate infrastructure improvements with land use planning to direct growth to desired areas, and away from environmentally sensitive areas. Sustainable solutions to transportation problems are more likely to be realized by focusing on longer-term approaches that provide increased transportation choices (multi-modal mobility), that bring people to the activities or the activities to the people (accessibility), that foster community vitality, environmental justice, and quality of life (livability), and that meet our social, economic, and ecological needs without compromising the ability of future generations of all species to do likewise (sustainability). Planners and decision makers should consider opportunities to reduce transportation demand, and where demand exists, address the real and underlying transportation need: to move people and goods not necessarily cars.
http://www.fhwa.dot.gov/planning/sgindex.htm
http://www.epa.gov/smartgrowth/

-Provide analytical support for community-generated ideas, and explore multi-faceted solutions. It may be possible to combine several ideas/alternatives that, collectively, will address the project need. A package of alternatives could include alternative transportation modes, trip reduction, land use adjustments, parking controls, pricing mechanisms, other incentives and/or disincentives, new route design or traffic circulation patterns, and more.

-Transportation demand management should be evaluated. Include transportation demand management (trip reduction) and transportation system management (TDM and TSM) in all projects and alternatives, with the greater emphasis upon TDM. An array of travel alternatives, roadway use options such as carpool lanes, financial incentives, work hours and location management options exist, and more ideas are being generated. Land use strategies, such as mixed use and transit oriented development, also serve to curb travel demand.

-Maximize the use of existing infrastructure. Prevent further habitat degradation, fragmentation, and loss by making better use of existing transportation infrastructure. For example, emphasize use of existing rights-of-way, improving existing rail lines, roads, and trails, and better integrate existing transportation infrastructure with land use planning. Actions such as re-striping pavement to provide bike lanes, peak hour lane conversion for high occupancy vehicles (HOV), and transit priority/preference techniques such as traffic signal override and synchronization, are easy, inexpensive innovations that can make a difference in traffic flow and livability.

-Consider redevelopment. Redevelopment prevents sprawl and protects farms, forests, and natural lands by making better use of existing developed areas and urban space. It can also exert a positive influence on the surrounding community. Businesses thrive when they are located in attractive settings that are accessible to pedestrians, bicyclists, and public transportation; communities develop when people get out of their cars; and the

amenities provided by the natural environment, farmlands, and rural areas remain intact.

Cumulative Effects

-NEPA requires that cumulative impacts be addressed as a summary of the individual impacts of this and all other past, present, and "reasonably foreseeable" future plans and actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions. This should include identification of all the direct and indirect effects that are known, and a good faith effort to explain the effects that are not known but are reasonably foreseeable.

-In January 1997 the President's Council on Environmental Quality (CEQ) published, "*Considering Cumulative Effects Under the National Environmental Policy Act*", guidance that provides a framework for analyzing cumulative effects http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm. In May 1997 EPA published a document entitled, "*Consideration of Cumulative Effects in EPA Review of NEPA Documents.*" This document can be found at, http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf . The California DOT also has developed good guidance for cumulative effects analysis, http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm.

The cumulative effects analysis should:

1) Identify the area in which effects of the proposed project will be felt and existing conditions and trends.

2) Determine resources within the project impact area that could be affected by the highway project, particularly the resources most likely to be significantly impacted and the geographic areas in which those resources are located; and the condition of such resources (i.e., the extent to which they are degraded). Use appropriate analysis area boundaries for the resource and time period over which the cumulative effects have occurred or will occur. In most cases, the largest of these areas will be the appropriate area for analysis of cumulative effects. The selection of geographic boundaries should be, whenever possible, based on the natural boundaries of resources of concern (e.g., watershed boundary for water quality issues). The temporal scope requires estimating the length of time that effects of the proposed action singly or in combination with other anticipated actions will last and be significant to the resources of concern. The period of time that the proposed action's impacts persist can extend beyond the project life. The analysis should extend until the resources have recovered from the impact of the proposed action.

3) Identify impacts that are expected to resources of concern from the proposed project through analysis of cause-and-effects relationships. Knowing how a particular resource responds to environmental change (cause-and-effect relationship) is essential for

determining the cumulative effects of multiple actions. Cause-and-effect pathways should be identified to understand how the resources respond to environmental change (i.e., what the effect is). The cause-and-effect relationships for each resource should be understood to determine the magnitude of the cumulative effect resulting from all actions included in the analysis.

4) Identify other actions -past, present, and reasonably foreseeable future actions- that have had or are expected to have impacts in the same area, and the impact or expected impacts from these other actions. Even unrelated actions conducted on by other agencies or persons on all land ownerships, if they contribute to cumulative effects on a resource, should be incorporated into the analysis. A common inadequacy of documents is the lack of analysis or disclosure of the sum of individual effects of all projects on the local environment. A summary listing of other projects occurring in the vicinity without the accompanying analysis is insufficient. The identification of the effects of past actions is critical to understanding the environmental condition of the area. The EIS should consider how past and present activities have historically affected and continue to affect the resources, ecosystems, and communities of concern. Linked Developments - If the construction of a new road or reconstruction of an existing road will likely facilitate or cause additional developments, the effects of these linked impacts must also be analyzed. The concept of a baseline or environmental reference condition against which to compare predictions of the effects of proposed actions and reasonable alternatives is critical to the NEPA process. The baseline condition of the resource of concern should include a description of how conditions have changed over time and how they are likely to change in the future with and without the proposed action.

It is also important to incorporate future actions of agencies and the public into cumulative impact analyses. Good cumulative effects analysis requires close coordination among agencies and the public to ensure that all past, present and reasonably foreseeable future actions are considered. Reasonably foreseeable future actions need to be considered even if they are not specific proposals. The criterion for excluding future actions from analysis whether they are "speculative." In general future actions can be excluded from the analysis of cumulative effects if: a) the action is outside the geographic boundaries or time frame established for the cumulative effects analysis; b) the action will not affect resources of concern that are the subject of the cumulative effects analysis; and c) including the action would be arbitrary.

5) Determine the overall cumulative impacts that can be expected if the individual impacts are allowed to accumulate, and provide comparisons of cumulative impacts for the proposed actions and the reasonable alternatives in relation to the no action alternative and/or an environmental reference point. The analyses should provide a clear basis for choice among options by the decision maker and the public.

6)Identify mitigation measures where appropriate to reduce adverse cumulative effects. Monitoring should be put in place to evaluate predictions and mitigation effectiveness.

Air Quality

-Impacts of highway alternatives on air quality must be analyzed and disclosed, and quantified where possible. Existing air quality and meteorological monitoring data should be presented, as well as needed data gathering to adequately perform air quality analysis and any monitoring proposed. The primary issue of concern is motor vehicle emissions on air quality and their impact on 1) non-attainment areas; 2) Class I areas; and 3) areas where an air quality standard could be violated by increases in emissions due to increased motor vehicle use facilitated by completion of the project or the impact of not building a highway or transit project.

-The air quality analysis must demonstrate that the proposed alternative would not cause or contribute to any violations of the National Ambient Air Quality Standards, that it will not cause the air quality to degrade by more than any applicable PSD (Prevention of Significant Deterioration) increment, and that it will not cause or contribute to visibility impairment.

- Whether or not the project causes a violation of the NAAQS a thorough analysis of the impacts must be completed for the purpose of informing the public about environmental and health impacts and for use as a decision making tool.

-The following discussion presents the general criteria by which an EIS dealing with mobile sources is evaluated for air quality impacts. This discussion presents the areas to be considered rather than the details of the analysis.

1) A description of the existing air quality should be presented, including the study areas designation of attainment or non-attainment of National Ambient Air Quality Standards (NAAQS). Particular attention should be given to any areas along the corridor where people live near the highway (within 1000 feet) or where schools, hospitals, or elderly care facilities are near the facility. Residents and sensitive populations may be adversely impacted now or in the future and this should be discussed or the absence of these conditions should be noted.

2) A localized analysis of pollutants particularly carbon monoxide (CO) and PM-10 is required. For CO the eight-hour standard of 9 ppm is the controlling standard. However, it is useful to provide both one-hour and eight-hour concentrations. This analysis is required and should be proportional to the scope of the project. Until an EPA approved PM10 hotspot method is approved, a qualitative assessment for PM10 hotspots is acceptable.

3) Areawide analysis should be done for CO, PM_{10} (emissions and particulates made airborne from automobile use), and Volatile Organic Compounds as well as any other criteria pollutants or hazardous pollutants which may be affected by the

project. This analysis may not be necessary if the project is included in the State Implementation Plan (SIP) emission inventory.

4) The analysis should include a comparison of the "No Build" and all Build alternatives for existing conditions, worst case conditions, and the design years.

5) The traffic analysis should show the project's impact on average daily traffic, VMT, and speeds. The assumed population growth used to project traffic volumes should be identified to assure consistency with the population projections in the SIP.

6) Construction impacts and appropriate control measures to be taken should be discussed.

7) Monitoring should be conducted at areas of maximum concentration to which the public may be exposed. Air quality monitoring should be discussed with appropriate State, Tribal and/or EPA air quality staff (40 CFR Part 58 provides monitoring guidance).

8) An appropriate model should be used, based on the project scope. MOBILE 6.2 is the most recent mobile source emission factor model released by EPA.

9) A determination of whether the project conforms to the State Implementation Plan is required in Section 176(c) of the Clean Air Act (as amended November 15, 1991).

10) An assessment of mobile source air toxics (MSATs) must be included. Each project must be considered individually regarding the level of MSAT analysis. But in general a discussion of MSATs, their probably health effects, the quantitative (or in some cases qualitative) emission trends, likely receptors (nearby homes, businesses, schools), and sensitive populations impacted by MSATs (schools, hospitals, elder care facilities) near the proposed facilities. For many projects in Montana, the impact of MSATs will be negligible since receptors must be within 1000 feet to have an impact, this can be noted as a reason for a minimal assessment of MSAT impacts.

Section 176(c) of the Clean Air Act

-The analysis must describe any state or local air quality regulations or State Implementation Plan (SIP) requirements covering specific activities occurring as part of the project construction and/or implementation, and how compliance with those regulations or requirements will be achieved.

-The conformity provisions of the Section 176(c) of the Clean Air Act requires that all

federal actions conform to existing State Implementation Plans (SIP's), and prohibits federal agencies from taking any action that causes or contributes to a new violation of the NAAQS, increases the frequency or severity of an existing violation, or delays the timely attainment of a standard. Under section 176(c), the federal agency responsible for a proposed action is required to determine if its action will conform to the applicable SIP before the final EIS is completed. The final rule on the conformity provision can be found in 40 CFR Parts 51 and 93.

-If you have questions regarding air quality analysis please contact Mr. Jeffrey Kimes at EPA's Denver Office at 303-312-6445. Bob Habeck of MDEQ at 444-7305 is a Montana DEQ contact on Clean Air Act issues; and Betsy Wahl of EPA (Helena) at 457-5013 is an EPA Montana Office contact for Clean Air Act issues.

Weed Management

-Noxious weeds tend to gain a foothold where there are ground disturbances such as construction. The potential for spread of noxious weeds during road construction should be evaluated, and weed spread avoided/minimized with development of a weed management program that includes measures to prevent and control weed invasion. Disturbed areas should be revegetated (reseed with native grass mix), and where no native, rapid cover seed source exists, we recommend using a grass mixture that does not include aggressive grasses such as smooth brome, thereby allowing native species to eventually prevail. Mr. Phil Johnson, Botanist, Montana Dept. of Transportation, in Helena at 406-444-7657, may be able to provide guidance on revegetation with native grasses.

-We encourage prioritization of management techniques that focus on non-chemical weed control first, with reliance on chemicals being the last resort, since weed control chemicals can be toxic and have the potential to be transported to surface or ground water following application. Early recognition and control of new infestations is encouraged to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on water quality, fisheries, and biodiversity

-It is important that the water contamination concerns of herbicide usage be fully evaluated and mitigated. All efforts should be made to avoid movement or transport of herbicides into surface waters that could adversely affect fisheries or other water uses. Herbicides, pesticides, and other toxicants and chemicals must be used in a safe manner in accordance with Federal label instructions and restrictions that allow protection and maintenance of water quality standards and ecological integrity, and avoid public health and safety problems.

-Herbicide applicators should be advised of the potential for runoff of herbicides at toxic concentrations into the streams. The applicators should take precautions during spraying (e.g., applying herbicide only after careful review of weather reports to ensure minimal

likelihood of rainfall within 24 hours of spraying; special precautions adjacent to the stream to reduce runoff potential; etc.). It should be unequivocally stated that no herbicide spraying will occur in streams and wetlands or other aquatic areas (seeps, springs, etc.,). Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. Streams and wetlands in any area to be sprayed should be identified and flagged on the ground to assure that herbicide applicators are aware of the location of wetlands, and thus, can avoid spraying in or near wetlands.

Plant seeds can be carried from a source area by the wind, wildlife, livestock, pack animals, or on equipment tires and tracks, by water, and on the boots of construction workers. Care should be taken to implement control procedures to avoid weed spread. Measures for preventing spread from source areas to uninfested areas include:

- Ensure that equipment tracks and tires are cleaned prior to transportation to an uninfested site.
- Focus control efforts on transportation corridors to prevent tracking of seed into uninfested areas.
- Attempt to control the spread from one watershed to another to reduce water as a transport vector.
- If a localized infestation exists and control is not a viable option, consider rerouting roads around the infestation to reduce available vectors for spread.
- Establish an education program for industrial and recreational users and encourage voluntary assistance in both prevention and control activities.
- Reseed disturbed sites as soon as possible following disturbance.

http://ceq.eh.doe.gov/nepa/regs/eos/eo13112.html

Sole Source Aquifers

Direct and indirect effects of highway projects to sole source aquifers should be evaluated and disclosed (such as the Missoula Valley Aquifer, which is the only sole source aquifer currently designated in Montana under the Safe Drinking Water Act). No commitment for Federal financial assistance may be entered into for any project that EPA determines may contaminate a designated sole source aquifer through a recharge zone so as to create a significant hazard to public health. See
http://ceq.eh.doe.gov/nepa/regs/sdwa.html
http://www.co.missoula.mt.us/wq/

EPA, MDEQ and Missoula Valley Water Quality District requirements may be necessary to assure protection of the Missoula Valley Sole Source Aquifer. There may some trade-offs in considering appropriate BMPs for management and treatment of stormwater runoff in regard to whether pollutants are delivered to surface waters or ground water. For example, use of revegetated swales to manage runoff may be more protective of groundwater, but may not reduce pollutant delivery to surface waters as well as dry wells. Also, there are some filter type BMP's which are fairly good at removing pollutants, but

have more intensive maintenance needs. We encourage review and evaluation of such trade-offs as stormwater runoff BMPs are evaluated. There is a need to prevent degradation of both the Missoula Valley Sole Source Aquifer as well as surface waters.

Diversion of runoff to the floodplain and use of dry wells (or infiltration trenches) may be potential mitigation methods to manage stormwater runoff to reduce effects to the Missoula Valley Sole Source Aquifer. The floodplain can act as a grassed infiltration basin as long as the floodplain will hold the runoff until it can slowly infiltrate to groundwater and avoid being directed into nearby surface water bodies. If this mitigation method were to be utilized, and because the risk of groundwater contamination increases in very coarse soil types, the EPA would recommend that a detailed analysis of the soil type and the depth to the Missoula Valley Aquifer in the floodplain area be determined. Dry wells can also be an effective way to remove contaminants from stormwater runoff; however, if this mitigation method were used then the EPA would recommend that a regular dry well inspection and maintenance schedule and groundwater monitoring be performed.

Some websites that provide information on stormwater BMPS include, http://www.cabmphandbooks.com/ and http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/new_technology/CTSW-RT-01-050.pdf.

Wild & Scenic Rivers

-Direct and indirect effects of highway projects to designated wild & scenic rivers should be evaluated and disclosed, and efforts should be made to avoid and minimize adverse effects to wild & scenic rivers as much as possible.
http://ceq.eh.doe.gov/nepa/regs/scenicrivers.html

Farmland

-Direct and indirect effects to prime or unique farmland and farmland of statewide importance should be evaluated and disclosed, and efforts should be made to avoid and minimize adverse effects to such farmland as much as possible.
http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-3-1.pdf
http://ceq.eh.doe.gov/nepa/regs/exec81180.html

Historic Sites

-Direct and indirect effects to historic/archaeological/cultural resources should be evaluated and disclosed, and efforts should be made to avoid/minimize adverse effects to historic/archaeological/cultural resources as much as possible. The State Historic Preservation Officer and appropriate Tribal Cultural Resources staff should be consulted.
http://environment.fhwa.dot.gov/histpres/index.htm

Section 4(f) Sites

-Direct and indirect effects to Section 4(f) properties should be evaluated and disclosed (this includes any significant publicly owned public park, recreation area, or wildlife and waterfowl refuge and any land from an historic site of national, state or local significance), and feasible and prudent alternatives should be evaluated to minimize harm to such properties. See http://environment.fhwa.dot.gov/projdev/4fpolicy.htm . An FHWA Memorandum that discusses constructive use of Section 4(f) lands is available at http://environment.fhwa.dot.gov/guidebook/vol2/doc15i.pdf .

Underground Storage Tanks

-If the highway project may impact underground storage tanks along the project corridor, contact Ms. Andreas Hochhalter of the Montana Dept. of Environmental Quality in Helena at 406-444-1416 for further information regarding requirements relative to road construction work impacts on underground storage tanks.

Superfund Sites

-If highway projects will encroach upon sites on the State Superfund list (Montana Comprehensive Environmental Cleanup and Responsibility Act, CECRA) we suggest that you contact Ms. Denise Martin of the Montana Dept. of Environmental Quality in Helena at 406-444-5060 for further information, and contact Mr. John Wardell of EPA in Helena at 406-457-5001 regarding potential impacts on CERCLA Federal Superfund sites..

Lead-Based Paint

-If a bridge painted with lead-based paint is going to be torn down and replaced, identify if the existing bridge will be refurbished with lead based paint removed. If lead based paint stays on the steel girders the girders may be disposed of as scrap metal (i.e., there is an exemption for construction debris coated with lead based paints). However, if the old lead based paint is to be removed from the bridge via scraping or sandblasting, the scraping or sandblasting residue will have to be characterized to determine if it is a regulated hazardous waste (most likely with Toxicity Characteristics Leaching Procedures or TCLP). Bridge construction techniques that capture sandblasting residue may be needed. Contact Mr. Bob Reinke of the Montana Dept. of Environmental Quality in Helena at 406-444-1435 for further information on hazardous waste identification and disposal requirements. Mr. Bruce Cooper of EPA in Denver at (303) 312-6028 is an EPA contact on lead toxicity issues. Also, OHSA requirements for worker protection should be followed.

Asbestos

-If the highway project may impact abandoned commercial, agriculture and residential structures within the project area that may contain asbestos, contact Mr. John Podolinsky of the Montana Dept. of Environmental Quality in Helena at 406-444-2690 for further information on any requirements for road construction work that may impact structures that may contain asbestos. Mr. Robert Vick of EPA in Denver is a contact for asbestos toxicity issues at (303) 321-6204.

Noise

-Direct and indirect noise effects should be evaluated and disclosed, and efforts should be made to avoid and minimize noise effects as much as possible.
http://www.fhwa.dot.gov/environment/noise/

Environmental Justice

-Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires that Federal agencies make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations. The Executive Order makes clear that its provisions apply fully to Native Americans. Avoid disproportionately high and adverse human health and environmental effect on minority or low income populations. CEQ guidance for incorporating environmental justice considerations under NEPA are shown at this website http://ceq.eh.doe.gov/nepa/regs/ej/justice.pdf ; and FHWA environmental justice guidance is available at,
http://www.fhwa.dot.gov/environment/ej2.htm .

Pollution Prevention

Pollution Prevention, also known as "source reduction," is any practice which reduces, eliminates, or prevents pollution at its source. By reducing the total amount of pollution that is produced, there is less waste to control, treat, or dispose of, and there are less hazards posed to public health and the environment. As Benjamin Franklin once said, "an ounce of prevention is worth a pound of cure." We raise the pollution prevention issue here in a general manner to simply note that there is a national policy directed at reduction of pollution, recycling, and conservation of resources. Under Section 6602(b) of the Pollution Prevention Act of 1990, Congress established a national policy that organizes preferences for pollution prevention:

- Pollution should be **prevented** or **reduced** at the source whenever feasible (i.e. increase

efficiency in use of raw materials, energy, water, etc.);
- Pollution that cannot be prevented should be **recycled** in an environmentally safe manner whenever feasible;
- Pollution that cannot be prevented or recycled should be **treated** in an environmentally safe manner whenever feasible;
- **Disposal** or other **release** into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner

CEQ guidance for incorporating pollution prevention into NEPA is available at, http://ceq.eh.doe.gov/nepa/regs/poll/ppguidnc.htm).

The Montana State University-Extension Service in Bozeman has initiated development of a Montana Pollution Prevention program to provide information to businesses and industries in Montana regarding waste reduction, pollution prevention, and recycling (see website http://www.montana.edu/wwwated/links.htm). We encourage you to contact Mr. Michael Vogel at the MSU-ES Pollution Prevention Program at (406) 994-3451 or at <mvogel@montana.edu> to seek new ideas and technology.

Appendix D:
Threatened and Endangered Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
MONTANA FIELD OFFICE
585 Sheppard Way
HELENA, MT 59601
PHONE (406) 449-5225, FAX (406) 449-5339

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES*
Endangered Species Act

August 2006

C = Candidate
LT = Listed Threatened
LE = Listed Endangered
PCH = Proposed Critical Habitat
CH = Designated Critical Habitat
XN = Experimental non-essential population

*Note: Generally, this list identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed

County/Scientific Name	Common Name	Status
BEAVERHEAD		
Thymallus arcticus	Montana Arctic Grayling	C
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Canis lupus	Gray Wolf	XN
BIG HORN		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
BLAINE		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
BROADWATER		
Haliaeetus leucocephalus	Bald Eagle	LT
Canis lupus	Gray Wolf	XN
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Lynx canadensis	Canada Lynx	LT
CARBON		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	XN
Lynx canadensis	Canada Lynx	LT
Mustela nigripes	Black-footed Ferret	LE
CARTER		
Haliaeetus leucocephalus	Bald Eagle	LT

County/Scientific Name	Common Name	Status
Mustela nigripes	Black-footed Ferret	LE
CASCADE		
Haliaeetus leucocephalus	Bald Eagle	LT
Lynx canadensis	Canada Lynx	LT
CHOUTEAU		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
Lynx canadensis	Canada Lynx	LT
CUSTER		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Sterna antillarum athalassos	Interior Least Tern	LE
Mustela nigripes	Black-footed Ferret	LE
Grus americana	Whooping Crane	LE
DANIELS		
Haliaeetus leucocephalus	Bald Eagle	LT
DAWSON		
Scaphirhynchus albus	Pallid Sturgeon	LE
Sterna antillarum athalassos	Interior Least Tern	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Grus americana	Whooping Crane	LE
DEER LODGE		
Thymallus arcticus	Montana Arctic Grayling	C
Haliaeetus leucocephalus	Bald Eagle	LT
Canis lupus	Gray Wolf	LE, XN
Salvelinus confluentus	Bull Trout	LT, CH
FALLON		
Haliaeetus leucocephalus	Bald Eagle	LT
Grus americana	Whooping Crane	LE
FERGUS		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
Lynx canadensis	Canada Lynx	LT
FLATHEAD		
Salvelinus confluentus	Bull Trout	LT, CH
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Silene spaldingii	Spalding's Campion	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT, PCH
GALLATIN		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Zaitzevia thermae	Warm Spring Zaitzevian Riffle Beetle	C
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Canis lupus	Gray Wolf	XN
Lynx canadensis	Canada Lynx	LT
GARFIELD		

County/Scientific Name	Common Name	Status
Scaphirhynchus albus	Pallid Sturgeon	LE
Charadrius melodus	Piping Plover	LT, CH
Sterna antillarum athalassos	Interior Least Tern	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
GLACIER		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
Botrychium lineare	Slender Moonwort	C
GOLDEN VALLEY		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
Lynx canadensis	Canada Lynx	LT
GRANITE		
Haliaeetus leucocephalus	Bald Eagle	LT
Canis lupus	Gray Wolf	LE, XN
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
HILL		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
JEFFERSON		
Haliaeetus leucocephalus	Bald Eagle	LT
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Canis lupus	Gray Wolf	LE, XN
Lynx canadensis	Canada Lynx	LT
Mustela nigripes	Black-footed Ferret	LE
JUDITH BASIN		
Haliaeetus leucocephalus	Bald Eagle	LT
Lynx canadensis	Canada Lynx	LT
LAKE		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Howellia aquatilis	Water Howellia	LT
Silene spaldingii	Spalding's Campion	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
Botrychium lineare	Slender Moonwort	C
LEWIS AND CLARK		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	LE, XN
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
Mustela nigripes	Black-footed Ferret	LE
LIBERTY		

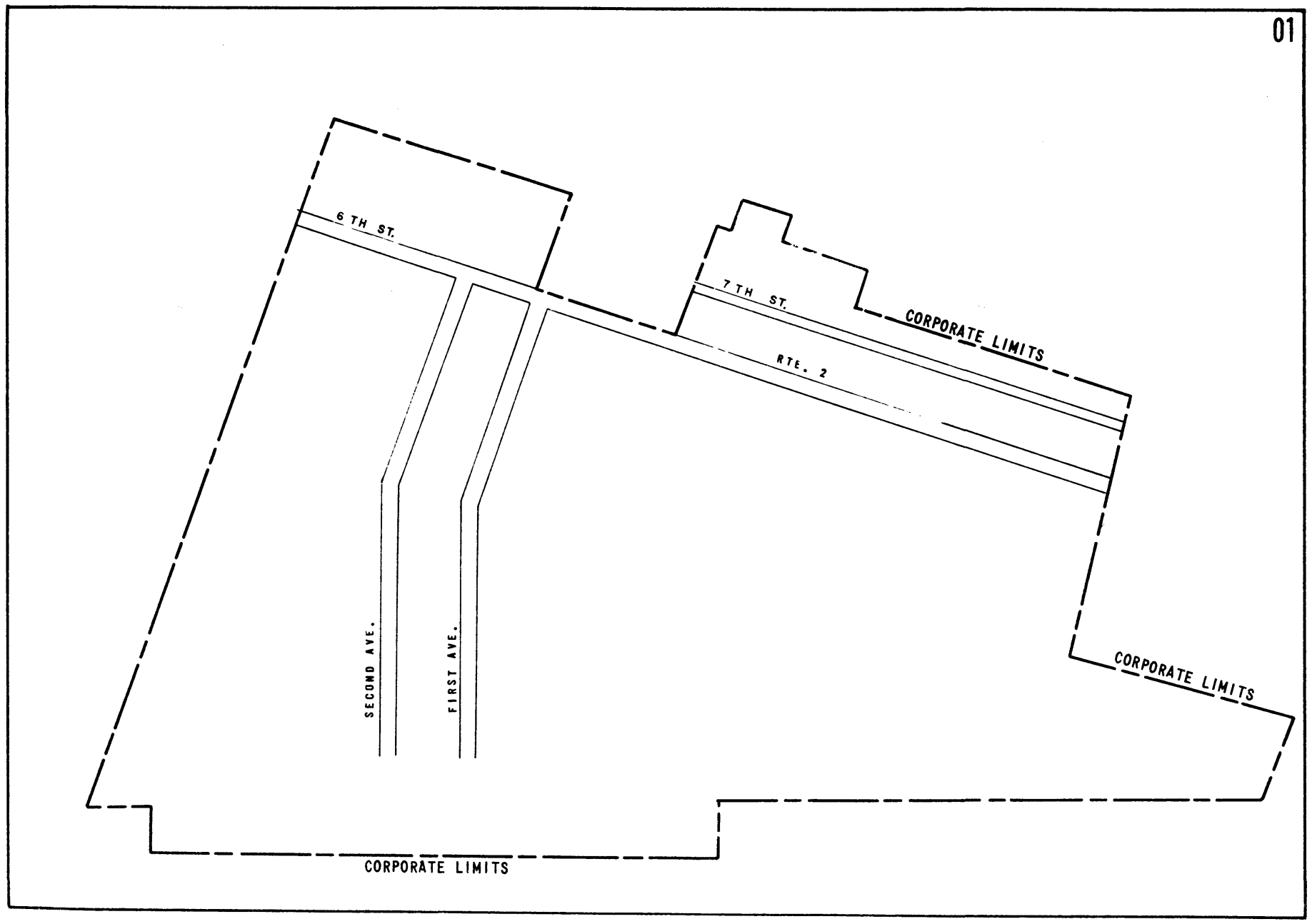
County/Scientific Name	Common Name	Status
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
LINCOLN		
Acipenser transmontanus	White Sturgeon (Kootenai River Pop.)	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Silene spaldingii	Spalding's Campion	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
Howellia aquatilis	Water Howellia	LT
Botrychium lineare	Slender Moonwort	C
MADISON		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Canis lupus	Gray Wolf	XN
Lynx canadensis	Canada Lynx	LT
McCONE		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Charadrius melodus	Piping Plover	LT, CH
Sterna antillarum athalassos	Interior Least Tern	LE
Mustela nigripes	Black-footed Ferret	LE
Grus americana	Whooping Crane	LE
MEAGHER		
Haliaeetus leucocephalus	Bald Eagle	LT
Lynx canadensis	Canada Lynx	LT
MINERAL		
Haliaeetus leucocephalus	Bald Eagle	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT
Salvelinus confluentus	Bull Trout	LT, CH
MISSOULA		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Howellia aquatilis	Water Howellia	LT
Canis lupus	Gray Wolf	LE, XN
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
Coccyzus americanus	Yellow-billed cuckoo (western pop.)	C
MUSSELSHELL		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
PARK		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	XN
Lynx canadensis	Canada Lynx	LT
PETROLEUM		

County/Scientific Name	Common Name	Status
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
PHILLIPS		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Charadrius melodus	Piping Plover	LT, CH
Mustela nigripes	Black-footed Ferret	LE, XN
Grus americana	Whooping Crane	LE
PONDERA		
Charadrius melodus	Piping Plover	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT, PCH
Haliaeetus leucocephalus	Bald Eagle	LT
POWDER RIVER		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
POWELL		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	LE, XN
Lynx canadensis	Canada Lynx	LT, PCH
Salvelinus confluentus	Bull Trout	LT, CH
PRAIRIE		
Scaphirhynchus albus	Pallid Sturgeon	LE
Sterna antillarum athalassos	Interior Least Tern	LE
Mustela nigripes	Black-footed Ferret	LE
Haliaeetus leucocephalus	Bald Eagle	LT
RAVALLI		
Haliaeetus leucocephalus	Bald Eagle	LT
Canis lupus	Gray Wolf	XN
Salvelinus confluentus	Bull Trout	LT, CH
Coccyzus americanus	Yellow-billed cuckoo (western pop.)	C
RICHLAND		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Charadrius melodus	Piping Plover	LT, CH
Sterna antillarum athalassos	Interior Least Tern	LE
Grus americana	Whooping Crane	LE
ROOSEVELT		
Scaphirhynchus albus	Pallid Sturgeon	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Charadrius melodus	Piping Plover	LT, CH
Sterna antillarum athalassos	Interior Least Tern	LE
Grus americana	Whooping Crane	LE
ROSEBUD		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
Sterna antillarum athalassos	Interior Least Tern	LE

County/Scientific Name	Common Name	Status
SANDERS		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT
Salvelinus confluentus	Bull Trout	LT, CH
Botrychium lineare	Slender Moonwort	C
SHERIDAN		
Charadrius melodus	Piping Plover	LT, CH
Grus americana	Whooping Crane	LE
Haliaeetus leucocephalus	Bald Eagle	LT
SILVER BOW		
Thymallus arcticus	Montana Arctic Grayling	C
Haliaeetus leucocephalus	Bald Eagle	LT
Canis lupus	Gray Wolf	LE, XN
Salvelinus confluentus	Bull Trout	LT
STILLWATER		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	XN
Lynx canadensis	Canada Lynx	LT
Mustela nigripes	Black-footed Ferret	LE
SWEET GRASS		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	XN
Lynx canadensis	Canada Lynx	LT
Mustela nigripes	Black-footed Ferret	LE
TETON		
Haliaeetus leucocephalus	Bald Eagle	LT
Ursus arctos horribilis	Grizzly Bear	LT
Canis lupus	Gray Wolf	LE
Lynx canadensis	Canada Lynx	LT, PCH
TOOLE		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
TREASURE		
Haliaeetus leucocephalus	Bald Eagle	LT

County/Scientific Name	Common Name	Status
VALLEY		
Scaphirhynchus albus	Pallid Sturgeon	LE
Charadrius melodus	Piping Plover	LT, CH
Mustela nigripes	Black-footed Ferret	LE
Sterna antillarum athalassos	Interior Least Tern	LE
Haliaeetus leucocephalus	Bald Eagle	LT
Grus americana	Whooping Crane	LE
WHEATLAND		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
Lynx canadensis	Canada Lynx	LT
WIBAUX		
Haliaeetus leucocephalus	Bald Eagle	LT
Scaphirhynchus albus	Pallid Sturgeon	LE
Sterna antillarum athalassos	Interior Least Tern	LE
Grus americana	Whooping Crane	LE
YELLOWSTONE		
Haliaeetus leucocephalus	Bald Eagle	LT
Mustela nigripes	Black-footed Ferret	LE
Grus americana	Whooping Crane	LE

Appendix E:
FEMA Flood Map for Town of Culbertson



KEY TO MAP

Zone Designations

ZONE C
ZONE A
ZONE C

Elevation Reference Mark — $RM7_X$

Zone D Boundary ——————→ — — —

River Mile — •M1.5

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
C	Areas of minimal flooding.
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.

NOTES TO USER

INITIAL IDENTIFICATION:
MARCH 29, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS:
DECEMBER 19, 1975
FLOOD INSURANCE RATE MAP EFFECTIVE:
MAY 15, 1986
FLOOD INSURANCE RATE MAP REVISIONS:
NONE

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

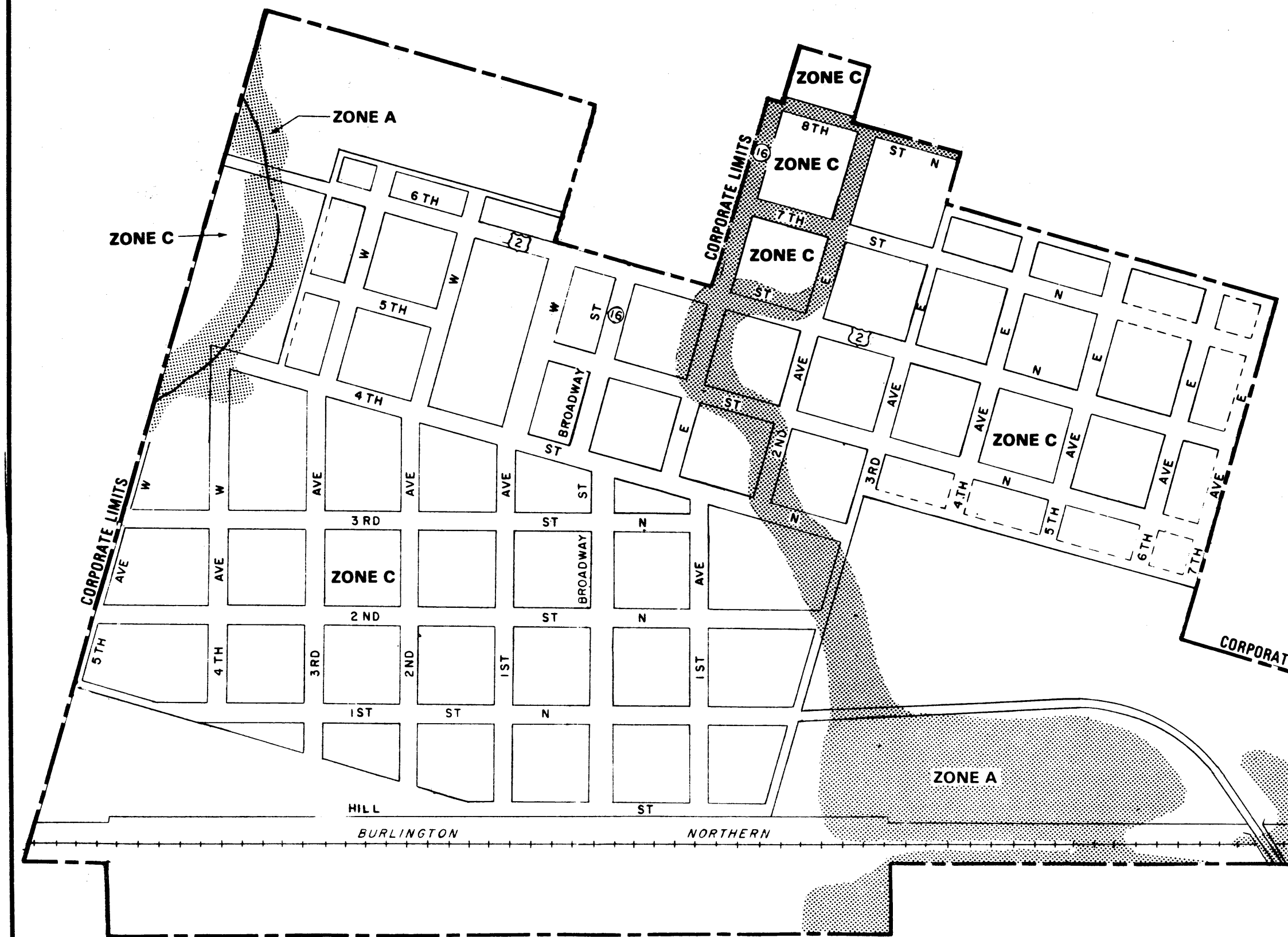
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD INSURANCE RATE MAP
PANEL(S) 01

MAP INDEX

TOWN OF CULBERTSON, MT
(ROOSEVELT CO.)

COMMUNITY NO. 300067 B



APPROXIMATE SCALE
0 250 500 1000 1500 FEET

EFFECTIVE DATE:
MAY 15, 1986

FLOOD INSURANCE RATE MAP

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CULBERTSON, MT
(ROOSEVELT CO.)

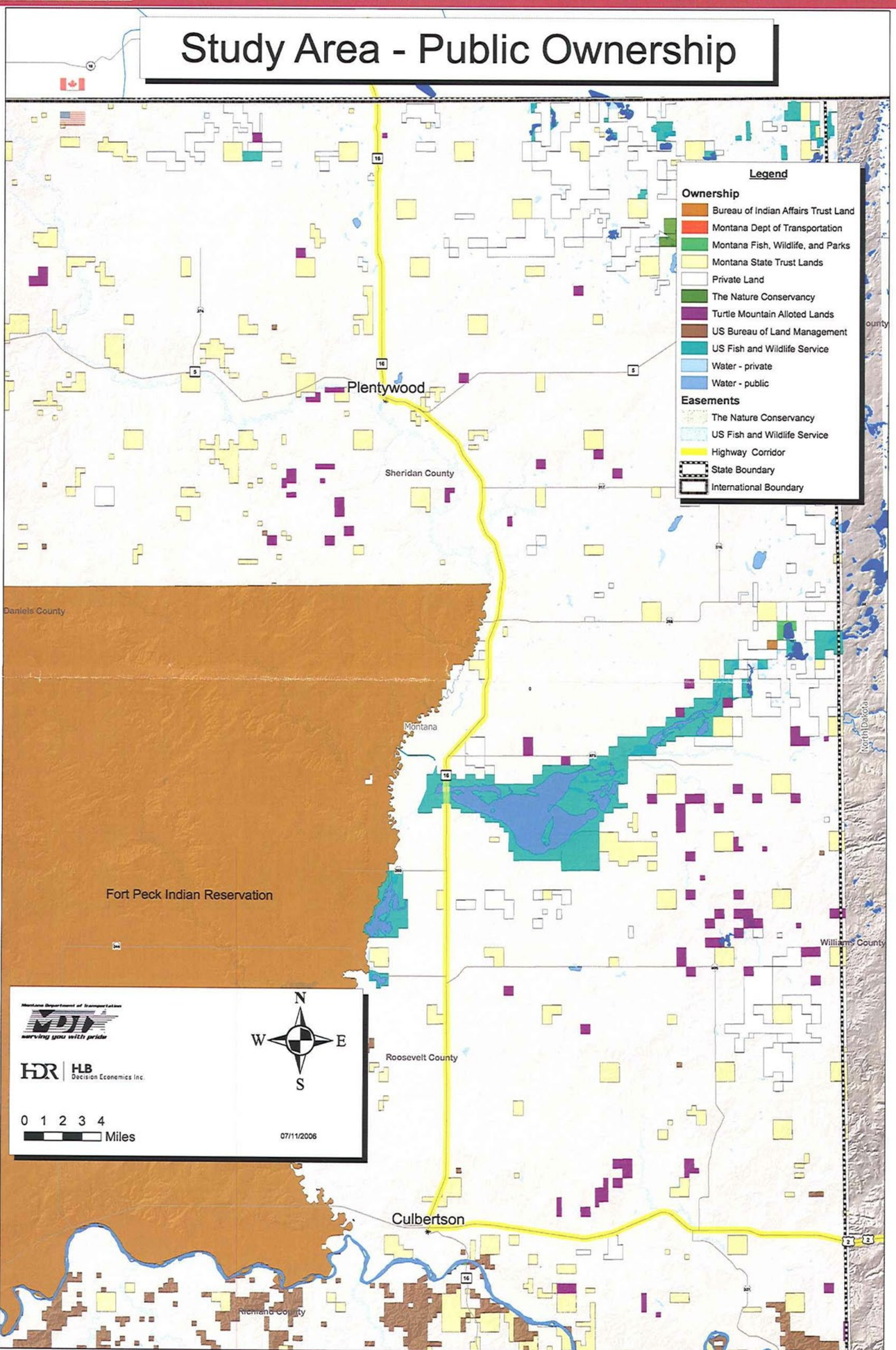
01

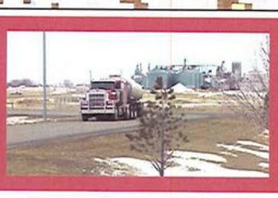
Appendix F:
Public Ownership Display Map

TRANSPORTATION REGIONAL ECONOMIC DEVELOPMENT STUDY
THEODORE ROOSEVELT EXPRESSWAY

TRANSPORTATION REGIONAL ECONOMIC DEVELOPMENT
TRED
THEODORE ROOSEVELT EXPRESSWAY

Study Area - Public Ownership



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